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Format for Agency Strategic Plan

01. Objective

- S1. Strategy
 - A1. Action
 - A2. Action
 - M1. Metrics that measure all actions above are aligned
- S2. Strategy
 - A1. Action
 - M1. Metrics that measure a specific action are indented
 - A2. Action

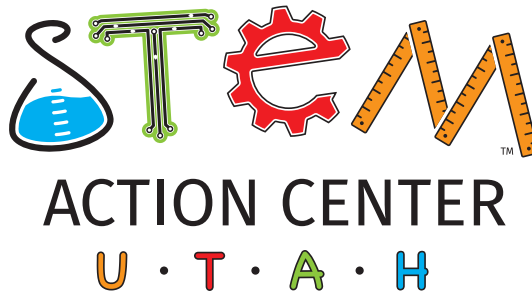


STEM Action Center Vision:

Produce a STEM-competitive workforce to ensure Utah's continued economic success in the global marketplace.

STEM Action Center Mission:

The STEM Action Center is Utah's leader in promoting science, technology, engineering and math through best practices in education to ensure connection with industry and Utah's long-term economic prosperity.



Executive Summary

- Science, Technology, Engineering, and Mathematics (STEM) careers are critical to Utah's continued economic competitiveness due to their direct ties to innovation, economic growth, and productivity. The State of Utah has responded to widespread concerns regarding the creation of STEM talent to ensure Utah's continued economic success in the global marketplace.
- Utah's talent gets diverted out of the STEM pipeline at three key times; high school graduation to matriculation, graduation from post-secondary education, and entry to the workforce. Additionally, women and minorities continue to be under-represented.
- Utah's industry requires talent with a core set of cognitive capabilities, which includes practical, hands-on AND problem solving as well as technical skills sets. *"Content, processing, and problem solving skills."*
- STEM fields provide Utah students with earning advantages at *every level* of educational attainment and provide innovation, technological growth, and economic development at the State and National level.

What Does Success Look Like for STEM Action Center?

- Attracting new investors and companies while supporting the expansion of existing Utah businesses by providing STEM-capable talent.
 - Supporting the Governor’s commitment to education and industry as partners in economic development.
- Leveraging resources to increase impact in education and talent alignment.
- Promote Utah as a talent rich state.
 - Improved proficiency in K-12 math and science scores.
 - Increased student and teacher engagement in STEM education and career pathways.
 - Improved teacher effectiveness that results in improved achievement for students.
- Increased investment in STEM education by Utah companies.
- Increased collaboration between K-16, industry, government agencies, and community.
- Increase in STEM graduates in Utah and an increase in Utah companies that hire students prepared with STEM skills.

The Utah STEM Action Center will address these issues through our programs and their program objectives, strategies and actions:

STEM Programs

Legislatively mandated funding

1. K-12 Math Personalized Learning
2. Professional Learning
3. Elementary STEM Endorsement
4. High School STEM Industry Certification
5. K-16 Computing Initiative

Operational funding

6. STEM School Designation
7. Classroom Grant
8. Organization Grant

Foundation developed funding

9. Utah STEM Bus
10. STEM For Life

Operational Support

1. Utah STEM Foundation
2. Marketing/Communications Outreach & Engagement

STEM Action Center Strategic Plan:

01. STEM Education

Implementing a broad-reaching strategy in the K-12 education system that supports high quality STEM professional learning for teachers.

- S1. STEM Action Center acts as a research and development center to collect and disseminate best practices for STEM education.
 - A1. “Best Practices” Educational Tools Provision to educators.
 - M1. Educators are using the top 15 identified “best practice” education tools.
- S2. Use resources to bring the latest in STEM education into Utah’s classrooms.
 - A1. Interscholastic STEM activities school participation.
 - M1. High schools participation in STEM fairs, camps, competitions.
 - A2. Mathematics Achievement change.
 - M1. Measure increase in student achievement Utah State Board of Education (USBE) data for mathematics standardized testing.
- S3. Enhance achievement in STEM-related aptitudes, skills and understanding of concepts.
 - A1. K-12 Math Personalized Learning Tools.
- S4. Increase teacher effectiveness in STEM-specific instruction, content, recruitment and retention.
 - A1. Professional Learning project.
 - A2. Elementary STEM Endorsement.
 - M1. Work with a third party evaluator to identify, collect, analyze and report data that determines effectiveness of all classroom and educator based projects.
- S5. Increase rigor, relevance and project-based learning in STEM-related areas.
 - A1. 7th and 8th grade Applied Science project in Career and Technical Education (CTE).
 - A2. High School STEM Industry Certification
 - A3. Classroom grants
 - A4. Student Fairs and Competition grants
 - M1. Use of software to manage and track data for all micro-grants.
- S6. Promote legislative, parent and student awareness of STEM education and careers.
 - A1. Advocate for targeted and intentional funding that supports efforts in STEM education and career development.
 - A2. Communicate STEM activities and successes to the Utah community at large.
 - M1. Document communication, media events, and social responses.

02. Establish best practices and tools for K-12 in STEM

Providing independently-assessed best practice tools and resources for teachers, administrators, parents, and students.

- S1. Facilitate the identification and application of best practices in STEM.
 - A1. Best Practices Conference
 - A2. Ongoing data collection and analysis with third party evaluator.
- S2. Promote career awareness and readiness of K-16 Students.
 - A1. 7th and 8th grade Applied Science project in Career and Technical Education (CTE).
 - A2. High School STEM Industry Certification

03. STEM Community Engagement

Increasing participation in interscholastic programs that recognize student achievement in STEM and ensuring publication of those results to the broader community.

- S1. Motivate and promote awareness and engagement in STEM efforts.
 - A1. STEM Fest
 - A2. Media Campaign
 - A3. Dynamic STEM website with deep resources for teachers, students and community at large.
 - A3. Utah STEM Bus—mobile classroom.
 - A4. Student participation in interscholastic STEM activities.
 - M1. Document participation in and satisfaction with conferences and outreach events.
- S2. Facilitate partnerships to promote support of STEM efforts in Utah.
 - A1. STEM Match mobile app
- S3. Align STEM education with talent needs of Utah companies.
 - A1. Engage private industry to provide STEM mentoring and support of program development.
 - A2. Utah STEM Industry Coalition
 - A3. K-16 Computing Initiative
 - M1. Track corporate investment (cash and in-kind).
 - M2. Document partnerships that result in innovation and effective program design and development.
- S4. Engage the media to support student STEM achievement.
 - A1. Track effectiveness of website and social media as a portal for information by documenting basic demographics, pages most frequented.

STEM Program Summaries

K-12 Math Personalized Learning

The STEM Action Center provides access to a selection of personalized learning software programs that have demonstrated through a rigorous evaluation process that there is a statistically significant relationship between program use and improved student outcomes in math.

- 01. Ensure that personalized math learning programs made available to schools are high quality, cost effective, and improve student achievement.**
- 02. Ensure that products are being used effectively, in a way that increases students' mathematics growth and proficiency.**
- 03. Recognize the limited resources allocated to math personalized learning. Ensure all allotted dollars are spent wisely and appropriately.**

Professional Learning

Support the intentional inclusion of STEM education through professional learning opportunities that will positively impact student experiences, outcomes, and growth in teacher practices.

- 01. Incorporate STEM Education, as defined by Utah State Board of Education (USBE) in Utah public education classrooms by supporting appropriate teacher professional learning opportunities.**
- 02. Create, provide, and support professional learning opportunities in alignment with legislation defining effective professional learning that provides value to the STEM community.**
- 03. Create and maintain a resource center for STEM-focused professional learning opportunities, leading to a reputation as a STEM resource throughout the state and nation.**
- 04. Establish, maintain, and justify professional learning funds allocated to STEM Action Center.**

Elementary STEM Endorsement

Provide elementary teachers in Utah access to additional education regarding STEM content and pedagogical skills needed to effectively incorporate STEM education into their classrooms.

- 01. Incorporate STEM education in Utah public elementary school classrooms by providing access to a state-recognized endorsement program designed for elementary school teachers. Content is to be delivered by higher education faculty, based on the agreed upon course frameworks, to increase content knowledge and pedagogical strategies.**
- 02. Engage educators, local education agencies (LEAs), Utah State Board of Education (USBE), and higher education partners in creating and maintaining partnerships and resources relating to STEM education in elementary schools.**

High School STEM Industry Certification

Pre-cursor to K-16 Computing Initiative – funding is completed

Establish pathway programs between secondary, post-secondary, industry, cultural and community partners, which create career awareness and build talent pipeline.

- 01. Incentivize secondary, post-secondary, industry partnerships, which provide secondary students with industry-recognized certifications and internship opportunities to prepare students for advanced education and employment.**
- 02. Increase visibility of specific industry-education partnership successes.**
- 03. Support transition from HS STEM Industry Certification Grant Program to K-16 Computing Initiative.**

K-16 Computing Initiative

This program was authorized by the legislature for commencement July 1, 2017. Consequently, the current strategy is under development by the agency and stakeholders, but the following outline provides preliminary planning prior to program launch.

Motivate students to participate in computing opportunities and elevate the relevance of computing education and careers.

- 01. Align connected network with shared goals, metrics and outcomes.**
- 02. Engage Industry-led, Advisory Group.**
- 03. Provide high quality professional learning and collaborative instructional support strategies.**
- 04. Support development and maintenance of relevant and rigorous courses and content.**
- 05. Provide equity and access to all students – including rural/urban, female, minorities, at-risk youth and people with disabilities.**
- 06. Establish pathway programs between secondary, post-secondary, industry, and cultural and community partners.**
- 07. Develop an engaging outreach and awareness plan.**

STEM School Designation

Provide a structured framework for schools to complete a thorough self-evaluation to inform long-term goals and success metrics that help to align teacher efforts and community expectations in STEM efforts.

- 01. Bring real-world applications of STEM into an educational context.**
- 02. Create, maintain, and disseminate research-based information surrounding STEM content-area knowledge, pedagogical success, and effective community engagement to assist schools in attaining and maintaining STEM designations.**

Classroom Grant

Recognizing that innovation developed by successful teachers needs to be replicated and shared, grants will be used to fund approaches to STEM education that enable teachers to implement innovative STEM ideas in the classroom.

- 01. Provide a mechanism which facilitates increased access to and involvement in innovative STEM curricula throughout Utah.**
- 02. Actively monitor funding of grants to support all components of STEM education.**
- 03. Actively promote innovative approaches, including curriculum, material design and STEM best practices statewide.**

Organization Grant

Incorporating Fairs Camps and Competitions student grants

The STEM Action Center funds grants to support innovative STEM programming for Utah preK-12 students in order to increase student STEM awareness and involvement.

- 01. Broaden student access to, and involvement in, STEM programs.**
- 02. Create statewide partnerships with organizations invested in Utah STEM education.**

Utah STEM Bus - USB

To ignite a passion for STEM education statewide, the STEM Action Center will utilize a mobile classroom to introduce real world learning experiences to students, parents and educators. The curricula will align with state standards and help build STEM talent.

- 01. Develop and maintain relevant and effective curricula that align to current state standards.**
- 02. Provide high quality and effective instruction of STEM content.**
- 03. Maintain community engagement with STEM Action Center and Utah STEM Bus.**
- 04. Implement a sustainability plan which provides ongoing support and program growth.**

STEM for Life

Funding from Intermountain Healthcare was awarded in May 2016.

The STEM for Life program promotes STEM Education through healthcare and healthy lifestyle themes.

- 01. Educate Utah students about the healthcare careers that exist in the state, and encourage them to pursue those careers in the future.**
- 02. Encourage increased industry support of integrated STEM in healthcare education.**

Operational Support

Utah STEM Foundation

The Utah STEM Foundation is the 501c3 non-profit fundraising arm of the Utah STEM Action Center, created in May 2016. The Utah STEM Foundation was created by legislative mandate to:

- Seek to enhance STEM funding and resource opportunities
 - Seek to create sustainable programs that will:
 - Connect industry to the classroom
 - Increase STEM workforce opportunities in Utah
- 01. Identify program focus areas in the near and long-term to enable the Foundation to meet its fundraising goals, as well as organizational purposes.**
 - 02. Follow a Fundraising and Financial Development Plan to provide a corporate level of awareness supporting STEM education.**
 - 03. Establish an endowment that will align STEM education with the talent needs of Utah's workforce.**

Marketing/Communications Outreach and Engagement

The STEM Action Center Marketing/Communications office will promote STEM statewide and where applicable nationally. These efforts will be undertaken to ensure the STEM Action Center remains essential to building partnerships with industry and community to assure Utah's long-term economic prosperity.

- 01. Create an agency strategy that addresses the Standard Target Audience (STA) of legislators, teachers, students, parents, administrators & industry members.**
- 02. Execute marketing plan which will include media outreach and social connectivity with the Standard Target Audience (STA).**
- 03. Create STEM managed events and sponsor external events that support the mission objectives of the agency programs and further the overall mission of the agency.**



Program Level Strategic Plans

K-12 Math Personalized Learning¹

The STEM Action Center provides access to a selection of personalized learning software programs that have demonstrated through a rigorous evaluation process that there is a statistically significant relationship between program use and improved student outcomes in math.

01. Ensure that personalized math learning programs made available to schools are high quality, cost effective, and improve student achievement.²

- S1. Qualitatively and quantitatively evaluate math personalized learning products.
 - A1. Evaluate correlations between student's math proficiency and product use.
 - A2. Evaluate correlations between student growth and product use.
 - A3. Examine the ROI of each math program.
 - A4. Evaluate qualitative feedback about each program from teachers and students.
 - M1. Quantitative/qualitative analysis of math products using teacher surveys, student surveys, and SAGE data – broken down by grade level, and stratified by level of usage.
- S2. Determine how math programs influence students' perceptions of mathematics.
 - A1. Survey students at the beginning of the year, and at the end of the year to examine students' perceptions of math and other math related subjects.
 - M1. Analyze difference in change from pre to post survey between control and treatment groups.

02. Ensure that products are being used effectively, in a way that increases students' mathematics growth and proficiency.³

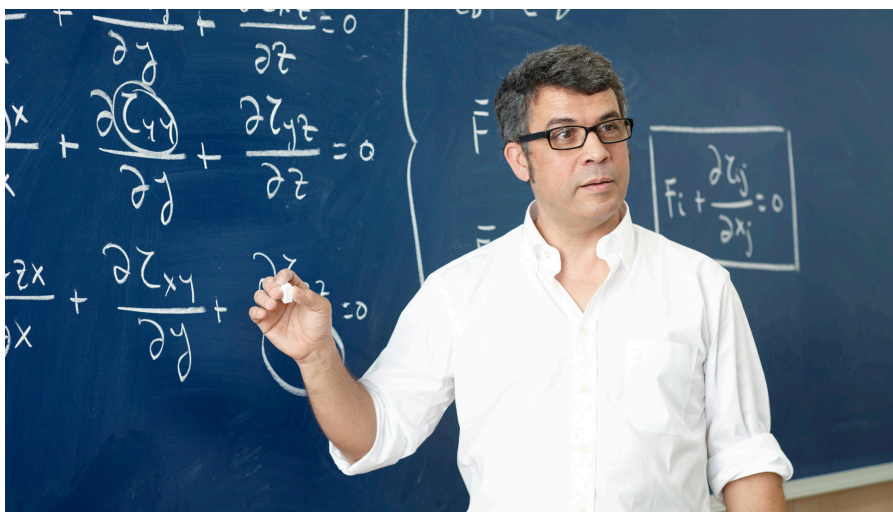
- S1. Define effective usage for each program.
 - A1. Analyze longitudinal usage data to determine "effective usage" levels for each product.
 - A2. Define usage standards to align with "effective usage."
 - A3. Shift the focus of stakeholders from "fidelity" (product provider recommended usage level), to "effective usage," based on Utah data.
 - M1. Changes in SAGE scores stratified by students' level of use, by product, comparing students with access to STEM Action Center approved software against students with no access to approved software.
- S2. Ensure that math technology is implemented equitably and used effectively.
 - A1. Move any licenses that are not used in a timely manner to other schools.
 - M1. Analysis of usage data from product providers.

- A2. Request implementation plans for grant participants, beginning the 2018-19 school year to determine best practices for implementation.
M1. Number of plans received.
- A3. Provide examples of successful implementation. Identify universal factors that influence successful integration of technology.
M2. Number of shared best practices.

03. Recognize the limited resources allocated to math personalized learning. Ensure all allotted dollars are spent wisely and appropriately.⁴

- S1. Create mechanisms to increase program capacity.
 - A1. Provide funding for a product to each adopting school for a defined implementation cycle to ensure effective use of personalized learning technology.
 - A2. As LEA's (districts and charter schools) demonstrate and that they have fully and effectively adopted math software, they have the opportunity to request a rollover of previous funding to new schools or classrooms within the LEA.
 - A3. Each year the STEM Action Center will allocate a percentage of funding to support new and/or high needs schools that will directly affect rural and underrepresented students.
 - A4. Advocate for new funds to meet increased demand.
 - A5. Actively market academic achievement success to the standard target audience in order to increase stakeholder buy in and expand implementation.
M1. Number of first time and returning applicants.

1. HB139:292-342 & HB150:284-331
 2. HB139:279-280 & HB150:279-280
 3. HB139:215-221 & HB150:229-233
 4. HB139:226-227 & HB150:223-224



Professional Learning

Support the intentional inclusion of STEM education through professional learning opportunities that will positively impact student experiences, outcomes, and growth in teacher practices.¹

01. Incorporate STEM Education, as defined by Utah State Board of Education (USBE) in Utah public education classrooms by supporting appropriate educator professional learning opportunities.

- S1. Maintain current, accurate content area knowledge focused on state content area standards.
 - A1. Stay informed on science and mathematics state standards and participate in revisions and updates.
 - A2. Participate as an active member on USBE STEM team.
 - A3. Stay current on science and mathematics research and development pertaining to topics taught to students.
- S2. Provide examples of STEM subject integration into other content areas based on core curriculum standards.
 - A1. Share examples of STEM integration activities within the following content areas: English Language Arts (ELA), Social Studies, Physical Education (P.E.), and Arts.
 - A2. Administer informal survey about integration example needs, based on subject areas and/or state standard topics.
 - M1. Track which subject area integration ideas are most visited/clicked.
 - M2. Use survey to determine integration support needs based on subject areas and/or state standard topics from teachers and administrators in the STEM community.
- S3. Share examples of research-based best practice STEM teaching strategies.
 - A1. Share examples via website and/or newsletter, including references for further information and study.
 - A2. Administer online survey about areas of STEM education implementation strategies most needed by educators and administrators.
 - M1. Track which category of teaching strategies is most visited.
 - M2. Produce gap analysis on areas of implementation support needed by teachers and administration. Over time, areas of need will become smaller and more defined by local needs.

02. Create, provide, and support professional learning opportunities in alignment with legislation defining effective professional learning that provides value to the STEM community.

- S1. Align available professional learning opportunities to legislative description of professional learning, found in 2014 GS HB 320.²
 - A1. STEM Action Center product partner professional learning opportunities will follow guidelines for effective professional learning.

- A2. Learning opportunities provided by STEM Action Center staff will follow guidelines for effective professional learning and best practice regarding adult education.
- A3. Instruction offered via STEM Action Center funded professional learning programs will adhere to guidelines for effective professional learning.
- A4. Promote STEM related professional learning opportunities provided by other agencies on calendar and social media.
 - M1. Use the defined guidelines for effective professional learning as rubric components for STEM Action Center funded professional learning applications.
 - M1. Track number of educator participants engaged in STEM-related professional learning opportunities offered or supported by STEM Action Center.
- S2. Provide and support opportunities that offer value in the form of additional content knowledge or pedagogical strategies to a variety of stakeholders including educators, schools, local education agencies and STEM-industry agencies.
 - A1. Facilitate the acquisition of re-licensure points based on hours of participation or other metrics as deemed appropriate by the State Board of Education to be used for renewing teacher licenses.
 - A2. Emphasize appropriateness of STEM professional learning as a component of the annual educator professional growth plan (PGP).
 - A3. Encourage participants to apply for USBE or university credit for the purpose of license renewal and lane changes affecting teacher compensation.



- M1. Capture student data to analyze the difference in schools that do and do not participate in STEM related professional learning opportunities.
 - M2. Track teacher and student data longitudinally to determine eventual impact on Utah STEM job preparedness and the rate of Utah public school graduates filling Utah STEM-industry positions.
 - M3. Use the professional learning tracking system selected by the State Board of Education to determine the number of teachers getting points for STEM related professional learning opportunities.
- S3. Identify successful professional learning opportunity structures currently in place and use these models as exemplars.
 - A1. Establish and maintain relationships and protocols with credit-granting agencies including USBE and higher education partners.
 - A2. Identify and share USBE approved STEM-related endorsement programs, including the Elementary STEM Endorsement, as well as professional learning opportunities available to educators in the summer months or other year-long learning resources.
 - A3. Rely on local education leaders to drive decision making about individual community needs.
 - M1. Complete a baseline asset inventory of STEM learning resources and then track the number of participants and learning opportunities available, including year-long programs, summer programs and single event opportunities.
 - M2. Track needs of educators and administrators regarding professional learning, then determine which professional learning opportunities the STEM Action Center can provide and/or support.

O3. Create and maintain a resource center for STEM-focused professional learning opportunities, leading to a reputation as a STEM resource throughout the state and nation.

- S1. Develop and maintain resource library on STEM Action Center website.
 - A1. Provide classroom activities, research-based teaching strategies and examples, and cross-content connections based on teaching standards.
 - A2. Include examples of effective video self- and peer-reflection about STEM in a classroom as well as templates and rubrics to support the integration of video based reflection.
 - M1. Administer a survey to teachers about the perceived impact on instruction after participating in video self-reflection.
 - A3. Share the dimensions required for STEM School Designation as a framework for focused school-wide improvement.
 - M1. Use data from website to determine which content areas are most visited and the amount of time typically spent with a resource.
 - M2. Collect data on the number of schools and individuals inquiring about the STEM School Designation process.

O4. Establish, maintain, and justify professional learning funds allocated to STEM Action Center.

- S1. Utilize the STEM School Designation as framework for targeted school-wide improvement.
 - A1. Identify varying examples of successful schools for each dimension to act as models/mentors for their communities.
- S2. Administer a grant program founded on video-based educator self-reflection and targeted opportunities for improvement.
 - A1. Require program participants to complete self-reflection on a filmed portion of a lesson to identify growth in a targeted area of their teaching practice.
 - A2. Encourage educators to include STEM focused targeted goals in their annual professional growth plans.
 - M1. Use a variety of metrics, including pre/post surveys, submitted lesson plans, and teacher reflection templates and feedback to gauge success in teacher growth regarding STEM implementation.
- S3. Fund new participants of STEM Professional Learning projects annually.
 - A1. Solicit information about the process participating schools or districts have in place to eventually decrease the amount of funds needed from outside organizations to support STEM related professional learning opportunities.
 - M1. Determine the number of participating schools able to support their programs after 3 years and 5 years based on overall amount of project and amount of funding requested from STEM Action Center.
 - A2. Advocate for new funds and funding sources to meet increased demand.
 - M1. Collect longitudinal data on the number of teacher participants and annual costs per year of program.
 - M2. Use random sample of teachers surveyed to determine STEM professional learning needs in state.

1. HB 150/2014 UCA#63m-1-3209

2. HB 320/2014 Utah State Board of Education creates definition of professional development as “a comprehensive, sustained, and evidence-based approach to improving teachers’ and principals’ effectiveness in raising student achievement.” Professional learning is further described as meeting the following standards: “occurring within learning communities committed to continuous improvement, individual and collective responsibility, and goal alignment; requires skillful leaders who develop capacity, advocate, and create support systems, for professional learning, requires prioritizing, monitoring, and coordinating resources for educator learning; uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning; integrates theories, research, and models of human learning to achieve its intended outcomes; applies research on change and sustains support for implementation of professional learning for long-term change; and aligns its outcomes with: performance standards for teachers and school administrators as described in rules of the State Board of Education and performance standards for students as described in the core curriculum standards; and incorporates the use of technology in the design, implementation, and evaluation of high quality professional learning practices; and includes targeted professional learning on the use of technology devices to enhance the teaching and learning environment and the integration of technology in content delivery.”

Elementary STEM Endorsement

Provide elementary teachers in Utah access to additional education regarding STEM content and pedagogical skills needed to effectively incorporate STEM education into their classrooms.

O1. Incorporate STEM education in Utah public elementary school classrooms¹ by providing access to a state-recognized endorsement program designed for elementary school teachers. Content is to be delivered by higher education faculty, based on the agreed upon course frameworks, to increase content knowledge and pedagogical strategies.

- S1. Provide current, accurate STEM content area knowledge focused on K-6 state content area standards.
 - A1. Revise frameworks regularly with input from educators, Utah State Board of Education state Science and Elementary Mathematics Specialists, and higher education faculty to maintain consistency in program content while allowing for appropriate differentiation based on participants, instructors, and location.
- S2. Model and reflect on appropriate pedagogical techniques for STEM instruction.
 - A1. Share examples of research-based best practice STEM teaching strategies.
 - A2. Share video of teacher efforts for feedback from cohort group as exemplars.



- M1. Collect information on the total number of participants enrolled, progress toward completion, and recorded completed endorsements annually.
- M2. Utilize data on longitudinal student success based on teacher completion and implementation of knowledge and skills gained from completing the Elementary STEM Endorsement.

02. Engage educators, local education agencies (LEAs), Utah State Board of Education (USBE), and higher education partners in creating and maintaining partnerships and resources relating to STEM education in elementary schools.

- S1. Provide opportunities for schools and educators involved in STEM to gather informally and discuss challenges, success stories, and ask questions to improve content knowledge and teaching practices.
- S2. Identify schools and educators with exemplar integration of STEM, including those schools that have received a STEM School Designation.
- S3. Establish and maintain relationships and protocols with higher education partners.
- S4. Create and maintain cohorts based on location and existing partnerships.
 - M1. Survey administrators and educators about barriers to effective STEM implementation as a baseline data point.

1. HB 150/2014, UCA#63m-1-3209



High School STEM Industry Certification¹

Pre-cursor to K-16 Computing Initiative – funding is completed

Establish pathway programs between secondary, post-secondary, industry, and cultural and community partners which create career awareness and build talent pipeline.

01. Incentivize secondary, post-secondary, industry partnerships, which provide secondary students with industry-recognized certifications and internship opportunities to prepare students for advanced education and employment.

S1. Successfully complete current grant program.

A1. Monitor grantees for program, budget and data outcomes.

A2. Balance budgets for each grantee and for the program as a whole.

A3. Produce data/information to highlight best practices/lessons learned.

M1. Number of students participating, certifications earned, internships begun and successfully concluded.

M2. Quarterly report regarding progress, expenses and data.

02. Increase visibility of specific industry-education partnership successes.

S1. Share grantee stories and testimonials.

A1. Grantee participation in Best Practice Conference sessions, publications, and STEM visibility opportunities through social media.



03. Support transition from High School STEM Industry Certification Grant Program to K-16 Computing Initiative.

- S1. Use lessons learned from current program to inform the internal and external processes, management, data tracking and sharing, and collaboration opportunities between grantees.
 - A1. Provide orientation to grantee administrators, so that they are able to establish local management processes, data tracking, and reporting, which meet the requirements of the statewide computing program.
 - A2. Provide ongoing budget updates with accurate funding levels to be transferred from HS STEM to CS/IT HS STEM Industry Certification Grant programs.
 - M1. Quarterly reports regarding progress, expenses and data including participation, certifications and internships

1. HB 150/2014 line 394, 63M-1-3211, allows the STEM Action Center to award grants to fund STEM related certification for high school students.



K-16 Computing Initiative

This program was authorized by the legislature for commencement July 1, 2017. Consequently, the current strategy is under development by the agency and stakeholders, but the following outline provides preliminary planning prior to program launch.

Motivate students to participate in computing opportunities and elevate the relevance of computing education and careers.

01. Align connected network with shared goals, metrics and outcomes.

- S1. Build Communities of Practice
- S2. Establish broad partnership, led by industry, which includes:
 - K-12 districts and charter schools and Utah State Board of Education
 - Higher education, 2- and 4-year institutions
 - Government agencies including Utah Department of Workforce Services, Department of Heritage & Arts, Office of Energy Development, Department of Natural Resources
 - Community and Cultural Partners
 - Talent Ready Utah
- S3. Integrate all computing efforts to leverage resources, including:
 - Code.org grant (K-12 professional learning)
 - CREATE Labs and Carnegie Mellon University grant (content, supplies and professional learning)



- Utah SB93 (tuition reimbursement for secondary endorsement)
- Expanding Computer Education Pathways (ECEP)

02. Engage Industry-led Advisory Group.

- S1. Establish core industry committee to advise STEM Action Center Executive Board.
- S2. Develop early employment opportunities for undergraduates.
- S3. Identify industry partner linkages with education to include classroom engagement, curriculum review, work-based learning opportunities, and CS IT advocacy with legislative, education and community entities.

03. Provide high quality professional learning and collaborative instructional support strategies.

- S1. Inventory all curriculum offerings.
 - A1. Inventory all vendor curriculums used in LEAs.
 - A2. Identify/highlight successful curricula from pilot grant recipients.
- S2. Provide clearinghouse of instructional support choices at each level of education.
- S3. Provide teacher professional learning for successful curricula.

04. Support development and maintenance of relevant and rigorous courses and content.

- S1. Provide multiple entry and exit points in the educational continuum.
- S2. Identify high quality resources for elementary and middle school classrooms.
- S3. Support work-based learning opportunities.



O5. Provide equity and access to all students – including rural/urban, female, minorities, at-risk youth and people with disabilities.

- S1. Develop distance and blended learning models.
- S2. Create virtual industry engagement.
- S3. Create incentives for underrepresented and at-risk populations.
- S4. Identify and target root causes of low participation.

O6. Establish pathway programs between secondary, post-secondary, industry, and cultural and community partners.

- S1. Administer High School STEM Industry Certification Grant Program—CS IT.¹
 - A1. Fund secondary, post-secondary, industry partnerships which provide secondary students with industry-recognized certifications and internship opportunities.
 - A2. Prepare high school students to pursue advanced education and/or employment.
 - M1. Student participation.
 - M2. Certifications earned.
 - M3. Internships begun and successfully concluded.
 - M4. Quarterly report regarding progress, expenses and data.
- S2. Administer SB 190 Grant Program (K-8 emphasis).²
 - A1. Design and implement comprehensive K-16 Computing Grants Program, based upon the following common elements:
 - (a) outreach and student engagement;
 - (b) courses and content;
 - (c) instruction and instructional support;
 - (d) work-based learning opportunities;
 - (e) student retention;
 - (f) industry engagement;
 - (g) stacked credentials that allow for multiple exit and entry points;
 - (h) competency-based learning strategies; and
 - (i) secondary and post-secondary collaborations.
 - A2. Fund collaborations/partnerships between K-12, post-secondary, industry and cultural and community partners to develop stacked credential pathways and build infrastructure for capacity expansion.
 - M1. Established grant application and approval process.
 - M2. Established success metrics for projects.
 - M3. Increased number of programs and certificates/degrees.
- S3. Procure Department of Labor H-1B Grant to fund upper High School through adult computing pathway projects.
 - A1. Create and align K-16 computing content and courses.
 - A3. Implement outreach and engagement strategies.
 - A4. Implement high quality professional development and innovative strategies for instructional support.
 - A5. Accelerate talent readiness through Early Industry Induction model.

S4. Identify additional funding streams which may be leveraged for pathway development for partner agencies and initiatives.

A1. Consider partner applications for: SWI, TRU/UCAP.

07. Develop an engaging outreach and awareness plan.

S1. Develop a high impact marketing and messaging campaign which emphasizes importance of computing education.

S2. Create materials and activities to engage parents and counselors.

S3. Develop afterschool and summer camp opportunities.

S4. Identify/create teacher, counselor, and administrative recruitment opportunities.

-
1. HB 150/2014 line 394, 63M-1-3211, allows the STEM Action Center to award grants to fund STEM related certification for high school students.
 2. SB 190/2017 line 69, 63N-12-214, grants creates the Computing Partnerships Grants program consisting of grants created in this part to provide for the design and implementation of a comprehensive K-16 computing partnerships program.



STEM School Designation

Provide a structured framework for schools to complete a thorough self-evaluation to inform long-term goals and success metrics that help to align teacher efforts and community expectations in STEM efforts.¹

01. Bring real-world applications of STEM into an educational context.

- S1. Involve business partners with local school communities to build engagement and awareness of needs.
- S2. Provide resources and support to create a continuum of community schools (elementary, middle/junior high school, and high school) with a focus on STEM-integration.
- S3. Meet parent expectations for providing students with a well-rounded education while preparing students to be college and career ready. Reports on future employment trends indicate that students with a well-rounded education are able to meet workforce demands without sacrificing other educational interests.



O2. Create, maintain, and disseminate research-based information surrounding STEM content-area knowledge, pedagogical success, and effective community engagement to assist schools in attaining and maintaining STEM designations.

- S1. Engage STEM designated schools in events that increase knowledge and awareness of STEM education, such as STEM Fest, STEM Academy for School Administrators, Best Practices Conference, and other events.
- S2. Maintain a network of schools, communities, and individuals to identify exemplars, act as mentors, and support new efforts within varying geographic locations.
 - M1. Determine annually the number of schools that are beginning, working on, and completing the STEM School Designation process.

1. HB 150/2014 lines 246-248, UCA#63m-1-3208



Classroom Grant

Recognizing that innovation developed by successful teachers needs to be replicated and shared, grants will be used to fund approaches to STEM education that enable teachers to implement innovative STEM ideas in the classroom.¹

01. Provide a mechanism which facilitates increased access to and involvement in innovative STEM curricula throughout Utah.²

- S1. Manage an annual statewide competition to find the best new ideas, and the accompanying fully developed, sharable lesson plans.
 - A1. Awarding the outstanding plan of the year and other honors.
 - M1. Awarded through a transparent selection process.
- S2. Maintain a repository highlighting STEM best practices that teachers can access for information and ideas.
 - A1. Require all awardees to submit shareable curriculum, photos/graphs/illustrations, and lesson plans which are tied to state standards.
 - M1. Track STEM repository usage.
- S3. Each year the STEM Action Center allocates a percentage of the classroom grant funding to support new and/or unique programs that will directly affect underrepresented, rural, and high-need students.
 - M1. Number of first time and returning applicants.



02. Actively monitor funding of grants to support all components of STEM education.³

- S1. Ensure that there are resources allocated for each STEM subject.
 - A1. Using a qualified advisory committee, actively engage in sourcing innovative curricula in each of the four STEM content areas.
 - A2. If one STEM area or grade level has limited content, endeavor to target these gaps in curriculum development.
 - M1. Track the total number of STEM resources for each content area, by grade level.

03. Actively promote innovative approaches, including curriculum, material design and STEM best practices statewide.⁴

- S1. Increase teachers' awareness and use of the classroom grant program and curricula that have been created.
 - A1. Utilize various marketing and communication tools to promote awareness and active use of created curricula.
 - A2. Showcase the "best of the best." Invite exemplar participants to share their successes at appropriate events such as STEM Best Practices conference and Utah Science Teachers Conferences, etc.
 - M1. Track the number of teachers/students impacted.
 - A3. Highlight the STEM repository.

1. HB139:226-227 & HB150:223-224

2. HB139:236-242 & HB150:234-240

3. HB139:264-265 & HB150:264-265

4. HB139:228-229 & HB150:225-226



Organization Grants

Incorporating Fairs Camps and Competitions student grants¹

The STEM Action Center funds grants to support innovative STEM programing for Utah preK-12 students in order to increase student STEM awareness and involvement.

01. Broaden student access to, and involvement in, STEM programs.²

- S1. In order to ensure equity, this program will support organizations with new and/or unique programs that will directly impact rural and high-need communities in addition to traditional Wasatch Front efforts.
- A1. Complete thorough review of funding opportunities for organizations that offer STEM programs.
- A2. Promote STEM opportunities to students and parents.
 - M1. Number of students participating.
 - M2. Number of first time and returning applicants.
 - M3. Track geographic distribution of funds.



02. Create statewide partnerships with organizations invested in Utah STEM education.³

S1. Expand program awareness.

- A1. Produce media publications highlighting program successes.
- A2. Seek out presentation opportunities at community groups, conferences, etc.
- A3. Utilize STEM Action Center Marketing: spotlights, social media, newsletters, events, etc.
 - M1. Number of applicants per solicitation.

S2. Develop influential STEM Action Center advocates from funded organizations.

- A1. Leverage grantee successes to establish a budget line item.
- A2. Require funded organizations to recognize/promote the STEM Action Center support of their programs.

1. HB 139/2013, 63M-1-3205 Line 222 directs the STEM Action Center to award grants to support STEM programming.

2. HB 139/2013 Line 190-191 indicate the STEM Action Center should ensure student participation in STEM fairs, camps and competitions.

3. HB 139/2013 Line 167-173 requires the STEM Action Center to have programs that coordinate STEM activities in the state.





Utah STEM Bus – USB¹

To ignite a passion for STEM education statewide, the STEM Action Center will utilize a mobile classroom to introduce real world learning experiences to students, parents and educators. The curricula will align with state standards and help build STEM talent.

01. Develop and maintain relevant and effective curricula that align to current state standards.

- S1. Engage industry and education community members in a curriculum development coalition to assess curriculum needs.
 - A1. Utilize a curriculum committee made up of educators, industry and community representatives.
- S2. Maintain a process by which curriculum will be reviewed annually for relevance, reception, effectiveness, workforce connection, and alignment with state standards.
 - A1. Seek out industry participation for development of cutting edge curricular content.
 - A2. Assess the interest of students and educators through participation in a survey regarding programs taught on the Utah STEM Bus (USB).
 - A3. Conduct an ongoing program introducing new, relevant, and cutting edge USB curriculum using an established policy.
 - M1. Track industry participation in program development and sponsorship.
 - M2. Track the Number of USB classes requested and taught statewide.
 - M3. Assess pre and post awareness and enthusiasm for further STEM study.

02. Provide high quality and effective instruction of STEM content.

- S1. Deliver relevant, engaging training that opens the minds of K-12 students to potential educational and career opportunities in STEM.
 - A1. Ensure the needs of rural, low-income and opportunity challenged populations are specifically addressed using curriculum that engages all students.
- S2. Make equipment and resources available, which may not always be accessible in traditional school communities.
 - A2. Teach only curriculum that has been vetted by industry and education partners and aligns with state educational standards.

03. Maintain community engagement with STEM Action Center and Utah STEM Bus.

- S1. Provide outreach programs that introduce STEM and connects communities with the STEM Action Center.
 - A1. Engage community through professional development through parent, community and industry events.
 - A2. Be a strong advocate for all STEM Action Center programs within communities served by the USB.
 - M1. Regularly review parent, student and educator awareness and support for the Utah STEM Bus program.





O4. Implement a sustainability plan which provides ongoing support and program growth.

- S1. Provide a connection point where industry can find resources to fulfill their STEM interests.
 - A1. Coordinate with the Utah STEM Foundation.
 - A2. Secure on-going financial and in-kind support to provide program consumables and curriculum development.
 - A3. Align USB programming with donor/sponsorship interests.
 - A4. Provide USB grants as funding is made available.
 - M1. Track USB program donations made through the STEM Action Center.
 - M2. Track the number of companies engaged with the Utah STEM Bus annually.
 - M3. Track the number of Utah STEM Bus grants awarded to schools annually.
- S2. Establish a volunteer program that supports Utah STEM Bus programs and curriculum development.
 - A1. Identify potential sources of volunteers.
 - A2. Utilize volunteers in program development and delivery.
 - M1. Track the number and hours of volunteers supporting the USB.

- S3. Provide USB programing to school community councils, community organizations, and parent organizations that reach beyond standard “on bus” student instruction.
- A1. Provide instruction opportunities for parents, educators and organizations supporting public education.
 - A2. Monitor demand for USB usage to determine appropriate program expansion.
 - A3. Have a process by which USB curriculum can be taught in a classroom when the bus is not available.
- S4. Maintain transparency of the program sufficient to meet legislative oversight and provides access points for parents, educators and industry.
- A1. Post quantitative and qualitative information about STEM Bus activities and accomplishments.
 - M1. Track total number of engagements with schools, industry and community organizations.

1. HB 150/214 Line 37 Expands the scope of the STEM education related technology program to more students.



STEM for Life

Funding from Intermountain Healthcare was awarded in May 2016.

The STEM for Life program promotes STEM Education through healthcare and healthy lifestyle themes.¹

01. Educate Utah students about the healthcare careers that exist in the state, and encourage them to pursue those careers in the future.

- S1. Use hands-on lessons, with real world applicability and clear career ties, to teach STEM in the classroom.²
 - A1. Select groups of Utah teachers to produce targeted modules that teach students about careers through hands-on activities and real world application.
 - A2. Ensure quality modules are submitted and compliance of participating teachers through clear project expectations.
 - A3. Create a repository of completed modules to be accessible to all Utah teachers.
- M1. Number of completed modules submitted to STEM AC at the end of the school year.



S2. Provide junior high and high school teachers with first-hand experiences of STEM careers that exist within the healthcare field so they will be better prepared to educate their students in the classroom.³

A1. Hold summer field trip opportunities for teachers, with multiple site visits over the course of two days.

A2. Holding regional Super Tours to ensure the careers teachers are exposed to are most applicable for their students.

M1. Pre and post surveys for participating teachers collected during Super Tours.

M2. Completed lesson plans submitted to STEM AC within a month of Super Tour.

S3. Ensure program sustainability.

A1. Use the Super Tours as an opportunity to recruit new cohorts of teachers for module development in the following school year.

M1. Number of industry partners invested in the program.

02. Encourage increased industry support of integrated STEM in healthcare education.

S1. Highlight the unique state/industry partnership of the STEM for Life program.

1. HB 139/2013 Line 40-43 states that the STEM AC work with industry to obtain private funding

2. HB 139/2013 Line 180 requires the STEM AC to provide assistance for Utah students

3. HB 139/2013 Line 180 requires the STEM AC to support professional development for educators



Operational Support

Utah STEM Foundation¹

Who we are:

The Utah STEM Foundation is the 501c3 non-profit fundraising arm of the Utah STEM Action Center, created in May 2016. The STEM Foundation was created by legislative mandate to:

- Enhance STEM funding and resource opportunities.
- Create sustainable programs that will:
 - Connect industry to the classroom.
 - Increase STEM workforce opportunities in Utah.

What Does Success Look Like for The Utah STEM Foundation?

- Attracting new investors and companies while supporting the expansion of existing Utah businesses by providing STEM-capable talent.
- Supporting the Governor's commitment to education and industry as partners in economic development.
- Leveraging resources to increase impact in education and workforce alignment.
- Increased investment in STEM education by Utah companies.
- Promote Utah as a talent savvy state.
- Increased collaboration between K-16, industry and community.
- Increase the number of Utah companies that hire students prepared with STEM skills.

The Utah STEM Foundation will address these issues through its programs and the STEM Action Center's program objectives, strategies and actions:

O1. Identify program focus areas in the near and long-term to enable the Foundation to meet its fundraising goals, as well as organizational purposes.

S1. Develop a programing plan.

- A1. Create a programing and design committee.
- A2. Analyze collaborators and competitors programs for insights.
- A3. Draft a list of potential programs, as well as suggested programs already initiated by the STEM Action Center.

- M1. Working with the Utah STEM Foundation board, Policies and Procedures documents will result from adopted programs.



02. Follow a Fundraising and Financial Development Plan to provide a corporate level of awareness supporting STEM education.

Establishing a Development Plan will allow the Foundation to outline potential sources of income and generate a plan for how income will be spent.

- S1. Identify additional strategic partners.
 - A1. Create and maintain a donor database.
 - A2. Utilize Utah STEM Foundation Board and STEM Action Center contacts for potential funding.
 - M1. With the STEM Action Center and the STEM Foundation Board participation, focus on a target number companies each month for possible relationship and funding opportunities.
- S2. The STEM Action Center Board will create fundraising goals.
 - A1. Cultivate existing donors and expand donor pool through active research and networking.
 - M1. The Utah STEM Foundation will set yearly goals based on programs selected and projected support from targeted donors.
 - M2. Grant and donation follow up, documenting, and reporting with each donation.
 - M3. File all appropriate tax forms and certification renewals.
- S3. Facilitate partnerships and create programs that will promote advocacy of STEM efforts in the State of Utah.
 - A1. Create inaugural and annual events to introduce each program or collaboration.
 - M1. Establish strategic sub-committees that align with programs initiated through STEM Action Center and Utah STEM Foundation.

03. Establish an endowment that will align STEM education with the talent needs of Utah's workforce companies.²

- S1. Create endowment allocations for each program that the STEM Action Center fund.
 - A1. Collaborate with nonprofit community organizations, government entities and other corporations, which are currently involved with entrepreneurship and STEM equity for underserved populations to expand more resource opportunities.
 - A2. Engage industry to provide STEM mentoring and support of these specific programs.
 - M1. Track corporate investment (cash and in-kind).
 - M2. Document partnerships that result in innovation and effective program design and development.
 - M3. Provide more staff to assist in fundraising efforts.

1. HB 150/ 2014 line 3, allows the STEM Action Center Board to create a foundation

2. HB426/ 2017 line 1, UCA#63N-12-204

Marketing/Communications Outreach & Engagement

The STEM Action Center Marketing/Communications office will promote STEM state-wide and where applicable nationally. These efforts will be undertaken to ensure the STEM Action Center remains essential to building partnerships to industry and community in an effort to assure Utah's long-term economic prosperity.¹

01. Create an agency strategy that addresses the Standard Target Audience (STA) of legislators, teachers, students, parents, administrators & industry members.

- S1. Maintain a regular communications outreach to STA through the media and direct mail, email and social media.
 - A1. Establish STEM awareness and relationships with key media organizations/departments. (i.e. KUTV, KSL, KUTV, Fox 13, KSL Radio)
 - A2. Create weekly high impact spotlights for legislators that feature their school district.
 - A3. Maintain a set of specific legislator based activities and information.
 - M1. Track the number of media stories, spotlights, legislator contacts and districts covered.

02. Execute marketing plan which will include media outreach, and social connectivity with the Standard Target Audience (STA).

- S1. Maintain the STEM Action Center's website with news, events and technical programmatic updates.
 - A1. Update news page on website and events page weekly.
 - M2. Quarterly verify that all content is current.
 - M1. Track the number of page visitors, page clicks and bounce rate.
 - A2. Include and update legislative mandated resources such as best practices and relevant legislation bills.
 - A3. Address all programmatic needs in regular meetings with program directors.
- S2. Monthly newsletter and weekly spotlight updating community on STEM opportunities and success in the state.
 - A1. Create newsletter that includes upcoming events, news around the state, grant opportunities and other STEM highlights.



- A2. Maintain template email for program directors to send spotlights that feature their program to be sent to legislators in targeted school districts.
 - M1. Track the number of newsletter open rates and increased newsletter sign ups.
 - M2. Track total number of created spotlights and open rate.
- S3. Maintain social media presence that furthers objectives through daily posts.
 - A1. Maintain regular contact with standard target audience including key legislators, school districts, industry partners etc.
 - M1. Track monthly: number and type of posts, number of followers, views, likes & clicks.
 - A2. Use all relevant social media applications such as Facebook, LinkedIn, Instagram etc. to reach STA.
 - M1. Increase in social media following; increase in post engagement from Google Analytics.

O3. Create STEM managed events and sponsor external events that support the mission objectives of the agency programs and further the overall mission of the agency.²

- S1. Oversee STEM created events including STEM Fest and STEM Best Practices.
 - A1. Utilize STEM Fest as a tool to build “ownership” and support with each part of the Standard Target Audience, specifically focused on improving support for the STEM Action Center with parents and legislators.
 - A2. Oversee STEM Best Practices event for teachers, to assist in meeting specific professional development objectives as defined by the Utah State Board of Education.
 - M1. Track the number of attendees at each event.
 - M2. Administer feedback surveys from each event to the standard target audience.
- S2. Exhibit and sponsor, when appropriate, to facilitate objectives at key STEM events across the state not “owned” by STEM Action Center.
 - A1. Coordinate activities and events with outside agencies, such as Women’s Tech Council, Utah Technology Council, Utah Jazz, CS/IT Industry Partners & educational institutions.
 - M3. Number of students/teachers impacted; engagement increase in social media.
- S3. Manage STEM Ambassador volunteers who assist with program and event implementation.
 - M1. Record number of hours each volunteer logs.

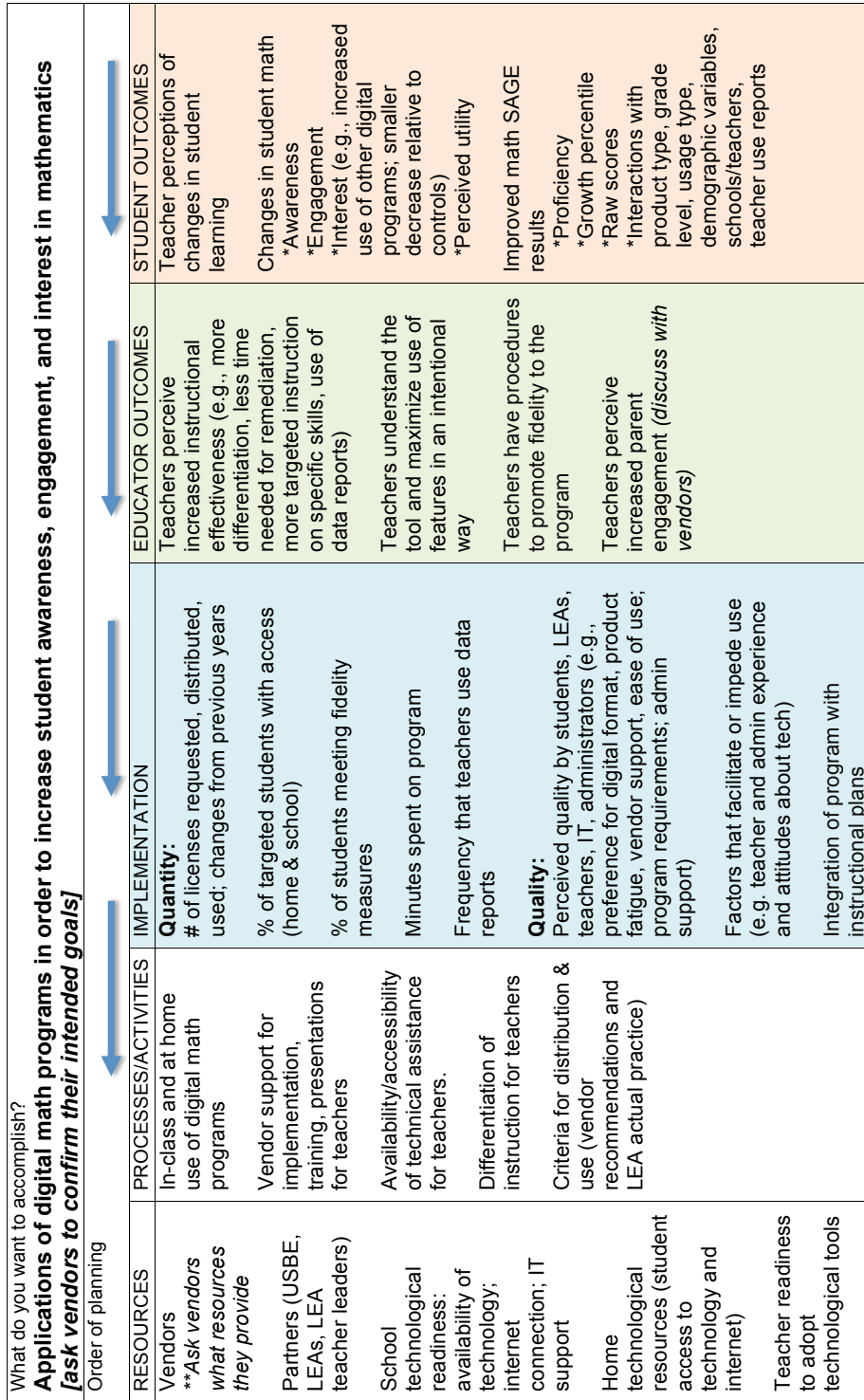
1. HB139/2013 Lines 163-197. In support of the responsibilities of the board the STEM Action Center will engage the stakeholders in the state, including children, educators, and industry in order to meet the objectives outlined in the creation of the Action Center

2. HB 139/2013 Lines 94-107 require the STEM Action Center to provide informational resources in support of the Center programs, including but not limited to, education, camps, grants and, programs created by the Center to fulfill its mission.



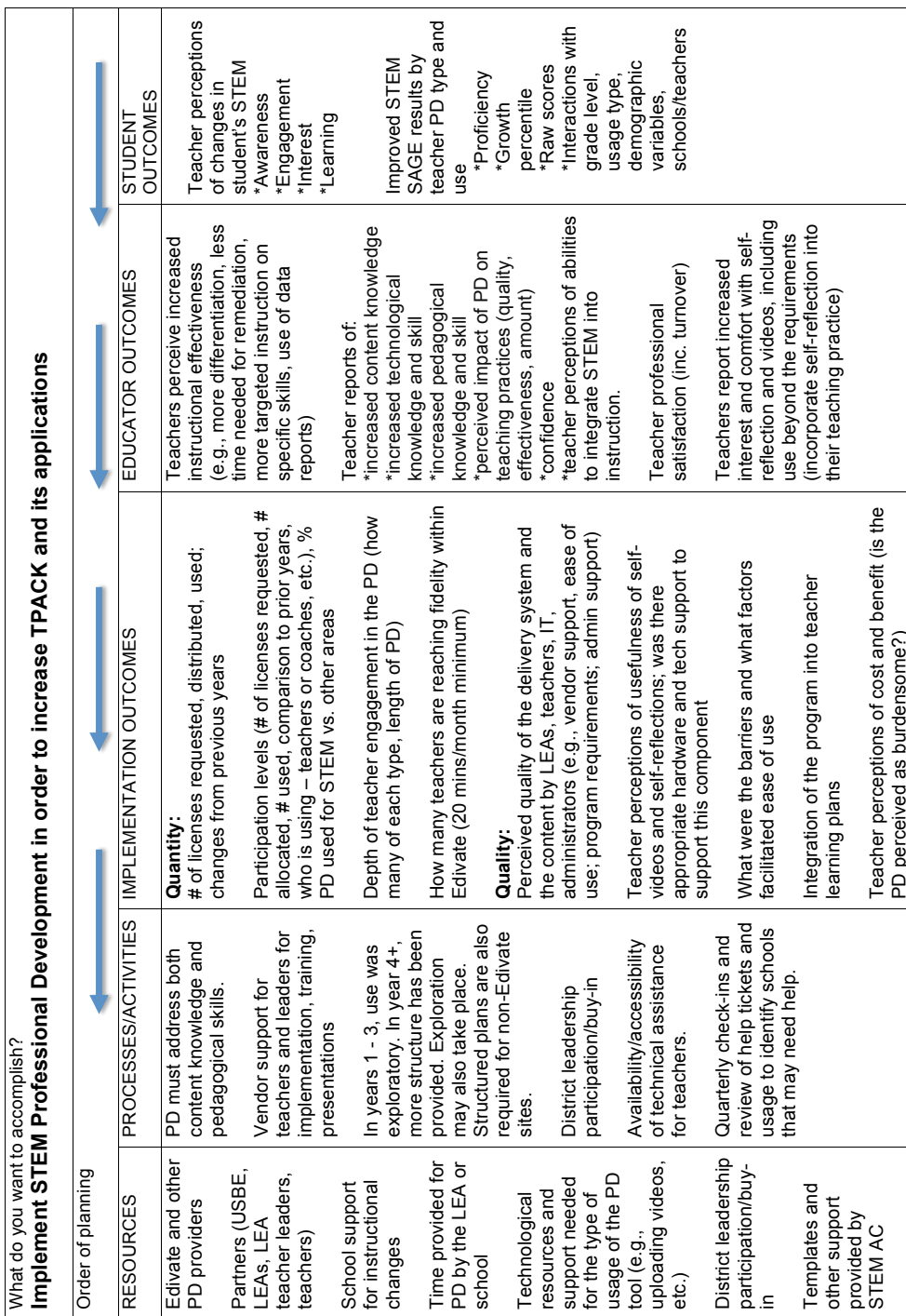
Appendix

Logic Model: K-12 Math Personalized Learning

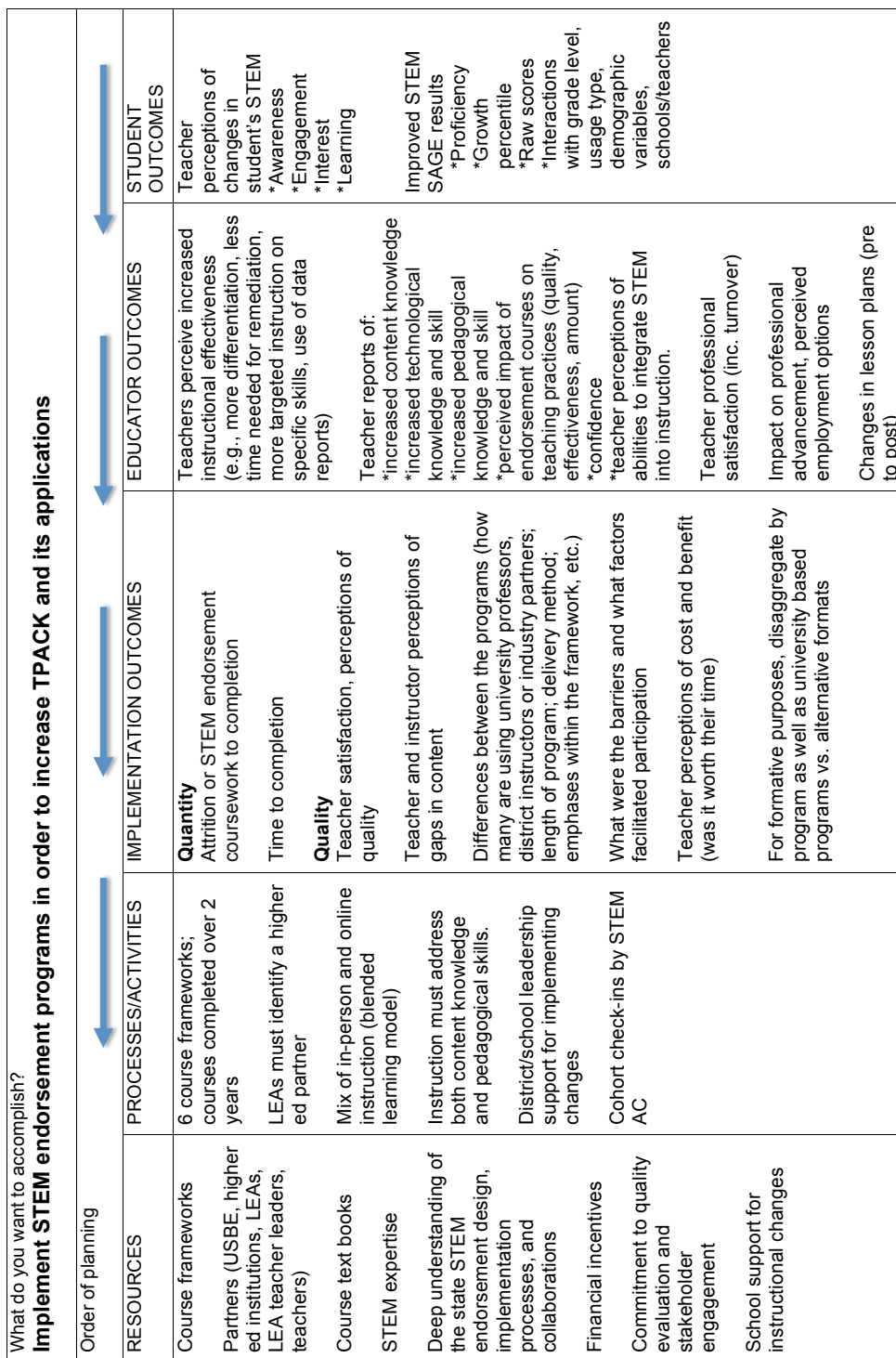


MTSS - Multi-tiered system of support; RTI 1) bring struggling students up to speed, 2) give to students to progress beyond, 3) main way is supplement to regular instruction (cyclical review, etc.) Regular assignment with remedial pieces. 4) quizzes and tests (allows students to have multiple attempts and master the material with immediate feedback.) 5) credit recovery.

Logic Model: Professional Learning



Logic Model: Elementary STEM Endorsement Program



Program Performance and Accountability Matrices

K-12 Math Personalized Learning						
Activity, Statute & Funding	Statutory	Performance Measures	Performance Impact FY15	Performance Impact FY16	Performance Goals FY17	Outcomes
Create a K-12 Math Personalized Learning program which is evaluated annually by an independent third party evaluation team, HB150, 63M-1-3205, FY14-16, all one time: \$5M (K-5) \$3.5M (6-8) \$5M (9-12) FY17: \$3M ongoing (K-12)	<ul style="list-style-type: none"> Select one or more products that: Support math instruction Provide individualized instruction Self-adapting Support informal assessments Embed monitoring and feedback mechanisms Create process for school selection Provide professional development that trains educators on use of products Support independent evaluation 	<ul style="list-style-type: none"> Percent usage (overall and at fidelity) Increased likelihood of grade level proficiency as determined by SAGE scores Teacher satisfaction with qualitative feedback Student satisfaction with qualitative feedback LEA participation Competitive license cost 	<ul style="list-style-type: none"> 11 products selected 74 districts and charters 653 schools 193,213 students 78% usage 9% fidelity 21,414 surveys completed 	<ul style="list-style-type: none"> 9 products selected 51 districts and charters 556 schools 168,389 students 80% usage 49% fidelity 30,371 surveys completed 	<ul style="list-style-type: none"> Increase usage with fidelity Visit and support LEA's with low usage Visit LEA's with high usage to understand learning environment Continue teacher training Implement changes to contracts and RFP, with new funding Evaluate program effectiveness by grade level on a standardized measure 	<ul style="list-style-type: none"> Increased support for student success in math Increased support to teachers to supplement instruction Improved opportunities for intervention and personalized instruction Improved access to data to inform instructional design

Classroom, Organizational & FCC Grants				
Activity, Statute and Funding	Performance Measures	FY16 Performance Impact	FY17 Performance Goals	Outcomes
Classroom Grants, HB139 63M-1-3204, Operational budget	1) Budget contribution 2) # of teacher participants 3) Teacher feedback 4) # of students impacted 5) Cost per student 6) Teacher feedback	<ul style="list-style-type: none"> \$77,270 contributed 280 applicants, 61 awarded 9,883 students impacted \$7.81/student 	<ul style="list-style-type: none"> Measure student impact Inform STEM best practices to improve teacher practice in classrooms statewide Create a repository of great STEM ideas for teachers to pull from Showcase exemplar teachers 	<ul style="list-style-type: none"> Increased resources in classrooms Increased direct support of educators
Organizational Grants, HB139 63M-1-3204, Operational budget	1) Budget contribution 2) # of organizations supported 3) # of students impacted 4) Cost per student 5) Student feedback	<ul style="list-style-type: none"> \$30,425 contributed 16 organizations funded 4,519 students impacted \$6.73/student 	<ul style="list-style-type: none"> Provide unique STEM opportunities for students outside of the classroom 	<ul style="list-style-type: none"> Increased statewide access for students Increased community awareness
STEM Assembly Program (STEM Magic Show), HB139 63M-1-3204, Private funding	1) # of shows conducted 2) # of students impacted 3) Teacher and student feedback 4) Amount of private contribution	<ul style="list-style-type: none"> New program \$10,000 private donation to pilot 	<ul style="list-style-type: none"> Host at least 30 show Impact more than 20,000 students Maintain \$10,000 private donation 	<ul style="list-style-type: none"> Increased student awareness
Utah STEM Fest, HB139 63M-1-3204, \$17,251 operational	1) # of exhibitors 2) # of students attending 3) # of LEAs participating 4) # of attendees on family night 5) # of bus scholarships provided 6) Participant feedback 7) STEM AC contribution 8) Private contribution	<ul style="list-style-type: none"> 66 exhibitors approx. 17,000 students attending 78 LEAs participated approx. 3,500 attendees on family night 51 bus scholarships \$17,251 contributed \$137,000 private contribution 	<ul style="list-style-type: none"> >21,000 students >6,000 evening attendees at least 80 LEAs participating at least 60 bus scholarships 	<ul style="list-style-type: none"> Increased student awareness Greater connection to careers
Public Awareness, HB139 63M-1-3204	1) # of page views on website 2) # of new users on website 3) # of new sessions on website 4) # of Facebook page likes 5) # of Twitter followers 6) # of Instagram followers 7) # of LinkedIn followers 8) # of Google+ followers 9) Website bounce rate	<ul style="list-style-type: none"> Website: 106,517 page views; 33,325 new users; 47,271 sessions Social media: Facebook(1,540); Twitter (900); Instagram (225), LinkedIn (184); Google+ (24) 111% increase Low bounce rate 	<ul style="list-style-type: none"> Website: 106,517 page views; 33,325 new users; 47,271 sessions Social media: Facebook(1,540); Twitter (900); Instagram (225), LinkedIn (184); Google+ (24) 111% increase Low bounce rate 	<ul style="list-style-type: none"> Greater awareness of STEM Increased use of resources
Event Sponsorships, HB139 63M-1-3204, \$64,470 operational	1) Budget contribution 2) # of events sponsored 3) # of total participants 4) Participant feedback	<ul style="list-style-type: none"> \$64,470 contributed 26 events sponsored 63,321 participants 	<ul style="list-style-type: none"> 30 events 70,000 students 	<ul style="list-style-type: none"> Increased opportunity and access for students
Fairs, Camps and Competitions Grants, HB139 63M-1-3204, Operational budget	1) Budget contribution 2) # of student participants 3) Student feedback 4) Cost per student	<ul style="list-style-type: none"> \$217,740 contributed 1,113 student participants \$196/student 660 applicants 257 awarded 	<ul style="list-style-type: none"> Project on hold Re-examine management and cost effectiveness 	<ul style="list-style-type: none"> Greater access to activities and events Increased interest in STEM

Professional Learning					
Activity, Statute, Funding	Statutory	Performance Measures	FY16 Performance Impact	FY17 Performance Goals	Outcomes
Design and implement a PL program, HB150 63M-1-3209, FY14 –FY17, \$5M ongoing	<p>1) Select one or more product providers that provide professional learning support that:</p> <p>2) Allows for SBOE, district or school to define the application content and track results</p> <p>3) Provides access to automatic tools, resources and strategies including instructional materials with integrated STEM content</p> <p>4) Supports online learning communities, including giving and receiving feedback via uploaded video</p> <p>5) Track and report data on usage</p> <p><i>Includes video of highly effective STEM education teaching that:</i></p> <p>a) Covers a cross section of grade levels and subjects</p> <p>b) Works USBE to ensure that videos will include highly effective Utah STEM educators</p> <p>c) Allow for additional STEM content to be added</p> <p>d) May create hybrid or blended professional learning that allows for face-to-face learning</p>	<p>1) # of teachers participating</p> <p>2) # of grants awarded</p> <p>3) License usage, where appropriate (overall and fidelity)</p> <p>4) # of LEAs participating</p> <p>5) # of schools participating</p> <p>6) # of surveys returned for qualitative assessment</p> <p>7) # of teachers trained on license, where appropriate</p> <p>8) # of videos created</p> <p>9) Type of videos viewed</p> <p>10) Qualitative assessment with teacher feedback</p> <p>11) # of teacher videos uploaded</p> <p>12) Evaluate changes in classroom instruction between pre & post video shared by teachers</p> <p>13) Evaluation of student performance</p>	<ul style="list-style-type: none"> 1 product supported (1 dropped at end of FY15) 78 grants awarded 18,938 licenses provided (18,093 requested) 41 LEAs participating 581 schools 2,563 in product provider training 5,453 teachers used licenses 50 videos produced by product provider 258 surveys completed and submitted Summary of types of videos viewed in final report: key finding, 90% of videos viewed were classroom management Summary of teacher feedback in final evaluation report: key finding, disconnect in teachers versus administrator satisfaction 	<ul style="list-style-type: none"> Increase usage Continue teacher training Scale up 2.0 Look for ways to utilize Edviate platform for other STEM AC projects (math, CTE etc.) Offer additional funds to support Edviate usage with face to face STEM professional Learning Learning Experience pilot for Digital Math program teachers 	<ul style="list-style-type: none"> Improved classroom management Increased confidence in STEM instruction Increased ability to implement lessons that cross content areas Increase student understanding and engagement

Elementary STEM Endorsement					
Activity, Statute, Funding	Statutory	Performance Measures*	FY16 Performance Impact	FY17 Performance Goals	Outcomes
Create and Implement elementary STEM endorsement, HB150 63M-1-3208, FY14-18, \$1.5M (one time)	<ul style="list-style-type: none"> Collaborate with USBE Develop STEM endorsements Create and implement financial incentives Support incentives for higher education credit (district) or impact salary schedule (charter) 	1) # of teachers participating 2) # of LEAs participating 3) # of institutions of higher education (IHE) participating 4) # of teachers completing 5) qualitative assessment with teacher feedback (pre- and post surveys) 6) institution feedback on quality of instruction	<ul style="list-style-type: none"> 332 teachers participated 23 LEAs represented 7 institutions of higher education providing courses 	<ul style="list-style-type: none"> Document # of teachers that completed the endorsement sequence (retention rate) Review of Course Frameworks with intent for refinement based on implementation and evaluation Sharing of best practices amongst cohorts 	<ul style="list-style-type: none"> Greater awareness of STEM Improved integration of STEM across curriculum Creation of peer networks

STEM School Designation					
Funding	Statutory	STEM AC activity	FY16 Outcomes	FY17 Performance Goals	
	<ul style="list-style-type: none"> Cooperate with USBE Designate STEM schools Identify criteria Establish implementation plans 	<ul style="list-style-type: none"> Identify criteria USBE and STEM AC Board approve Create implementation plan Solicit applications Review applications with stakeholder review team 	<ul style="list-style-type: none"> 42 applications in first cohort 19 selected 	<ul style="list-style-type: none"> create network of awardees and applicants for support add to list of STEM designated schools create list of interested future applicants and provide application support 	

High School STEM Certification				
Activity, Statute, Funding	Performance Measures	FY16 Performance Impact	FY17 Performance Goals	Outcomes
Create certifications that are industry recognized, HB150 63M-1-3211, \$5M (one time)	<p>FY16</p> <ol style="list-style-type: none"> 1) # of students entering certification programs 2) Documentation of new emphasis areas for certifications 3) # of new programs created 4) # of students completing certification programs 5) # of internships completed 6) # of partners (secondary and post-secondary) 7) # of new industry partners <p>FY17</p> <ol style="list-style-type: none"> 1) # of new CS courses created 2) # of new CS teachers recruited (endorsements, code.org training, K-6 training for CS Fundamentals) 3) # of new students participating in CS courses (breakdown by 8-12 grades, approved courses; baseline will be established using current USBE enrollment data for FY16) 4) # of new outreach programs 5) # of students participating in outreach programs 6) hours of industry engagement (with financial match of time) 7) # of students participating in work-based learning activities 8) amount of private contribution (combined with match of volunteer time) 9) # of K-6 schools offering coding opportunities (e.g., Scratch, Hour of Code) 10) # of hours of industry instruction 11) # of students from underrepresented populations participating in all supported activities 	<ul style="list-style-type: none"> • 6,919 students participated in certification pathways • 4,791 completed certifications • 639 completed internships • 12 grants awarded • 17 LEA's participated • 14 universities and technical colleges participated • 44 industry partners 	<ol style="list-style-type: none"> 1) Increase the number of qualified CS teachers 2) Increase the number of CS courses in secondary 3) Increase out of school CS opportunities 4) Increase access to coding in K-6 5) Work with districts to identify key investments required to implement a CS curriculum. (Data based on CS RFG) 6) Improve industry engagement in the classroom 7) Increase the participation of underrepresented populations in CS courses 	<ul style="list-style-type: none"> • Continue to collect for impact data • Monitor sustainability • Leverage programs for other opportunities • Increase the number of teachers undergoing computing professional development • Greater employment opportunities for students in high demand STEM careers

7 th and 8 th Grade Applied Science Initiative (CTE)				
Activity, Statute, Funding	Statutory Goals	Performance Measures	Performance Impact FY 16	Outcomes
Support hands on instruction in 7 th and 8 th grade science courses, FY14-15:\$3.5M (one time)	<ul style="list-style-type: none"> Develop an applied science initiative for grades 7 and 8 that includes: <ul style="list-style-type: none"> Curriculum with instructional materials Hybrid or blended high quality PD that allows for face-to-face applied learning Hands on tools for applied science learning Using an RFP process the Center may select a consultant 	1) # of curriculum resources selected 2) # of participating LEAs 3) # of students impacted in 7 th and 8 th grade courses 4) teacher satisfaction using qualitative feedback 5) student satisfaction using qualitative feedback 6) # of teachers using curriculum materials	<ul style="list-style-type: none"> 4 products selected and resources allocated 2,815 licenses used* 49,853 students impacted (about 50% of 7th and 8th grade students) 74 schools participated 38 LEAs represented 3,218 surveys collected (3,120 students and 98 teachers) feedback from teachers and students included in FY16 annual report; key finding: the majority of teachers want to continue to use resources, students report to have a strong interest in STEM-related areas 	<ul style="list-style-type: none"> Increase access to hands on, applied learning for students Enhance problem-based learning Facilitate teacher-to-teacher training for lesson alignment

Utah STEM Bus - USB					
Activity, Statute, Funding	Statutory	Performance Measures	Performance Impact FY16	Performance Goals FY17	Outcomes
HB 150/2014 Line 37	Expands the scope of the STEM education technology program to more students	<ul style="list-style-type: none"> - Industry Participation in programs and funding -USB classes taught -statewide -Pre and post surveys of students and educators -Donations received through the STEM foundation -Number of Companies Engaged with USB -USB grants awarded to schools -Number of hours of volunteer support -Engagements with Schools, industry and community organizations 	<ul style="list-style-type: none"> -Partnered with 13 organizations for program development -Implemented 7 curriculum -Taught a total of 3,287 students in 132 classes at 19 schools, in 16 LEAs 	<ul style="list-style-type: none"> -Develop curriculum committee -Update current curriculum -Add 2-4 new curriculum -Teach in 40 schools 4,000 students -Present the Bus at 20 events 	<ul style="list-style-type: none"> -Increased demand for USB Programs -Increased community awareness of the USB -Increased interest in STEM education and careers

Utah STEM Foundation				
Activity, Statutory (HB150 63M-1-3203)	Performance Measures	FY16 Performance Impact	FY17 Performance Goals	Outcomes
<ul style="list-style-type: none"> Develop and implement programs authorized to Promote STEM Education; and Implementation of other STEM education objectives Solicit and receive contributions from a private organization for STEM education objectives Comply with Title 51, Chapter 7, State Money Management Act; Foster partnerships with industry partners to enhance STEM Education in Utah 	<ul style="list-style-type: none"> Private contributions for program support Private contributions for endowment 	<ul style="list-style-type: none"> Boeing Comcast IM Flash Larry H. Miller MHTN (in kind design work) Rockwell Collins Tesoro IHC VCBO (in kind design work) 	<ul style="list-style-type: none"> Ongoing outreach to community and industry leaders Leverage funding opportunities and program development Finalize Foundation Board Hold an inaugural Foundation and program event Create a strategic and communication plan Fundraising goal of (\$250,000 to \$500,000 – based on 1 person working 12-20 hours per week) 	<ul style="list-style-type: none"> Awarded \$1.5 Million (5 year grant) from Tesoro for the creation of the Utah STEM Bus UTA donated 2 transit buses and a transit van Pro-bono work from architecture firms for bus schematics Mentorship program created with students for bus schematics Greater industry involvement Increased support for STEM opportunities for students and teachers

Authorizing Code & Bills

U.C.A. 63M-1-3201-3211

The STEM (Science, Technology, Engineering and Math) Action Center prioritizes STEM education, which works to develop Utah's workforce of the future. The program drives research and implementation of STEM education best practices across Utah by coordinating STEM-related activities, creating and supporting STEM education, facilitating educator access to education tools, and aligning public STEM education with higher-education STEM activities.

In order to advance STEM initiatives, the STEM Action Center Board will use legislative funding to oversee several projects that align with K-12 education and support the Utah State Office of Education and higher education partners. These programs address issues that support outreach, recruitment, retention and student achievement

Additionally, the STEM Action Center will align technology and innovation with industry needs and higher education initiatives to ensure development of the future workforce. This will be a safeguard to the state's economic prosperity by ensuring there is a workforce ready to take on the high-quality and high-paying STEM related careers.

HB 139

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS ACTION CENTER 2013 GENERAL SESSION STATE OF UTAH Chief Sponsor: Val L. Peterson Senate Sponsor: Stephen H. Urquhart

- 26 This bill creates educational programs for science, technology, engineering, and
27 mathematics (STEM).
28 Highlighted Provisions:
29 This bill:
30 creates a Science, Technology, Engineering, and Mathematics (STEM) Action
31 Center Board;
32 requires the STEM Action Center Board to:
33 establish a STEM Action Center; and
34 appoint an executive director to oversee administration of the STEM Action
35 Center;
36 requires the Governor's Office of Economic Development to staff the STEM Action
37 Center Board and the STEM Action Center;
38 requires the STEM Action Center Board to select providers, through a request for
39 proposals process, to provide education related instructional technology;
40 requires the STEM Action Center Board to work with private industry to obtain
41 private funding and support for the STEM Action Center;
42 as funding allows, requires the STEM Action Center Board to perform certain
43 duties related to the STEM Action Center;

requires the executive director to track student achievement and progress in STEM areas;

- requires the STEM Action Center Board to report to the Education Interim Committee, the Public Education Appropriations Subcommittee, and the State Board of Education once each year;
- creates the STEM education related technology program;
- allows the State Board of Education staff and STEM Action Center staff to award STEM education related instructional technology and related professional development to school districts and charter schools for instructional technology for STEM related education if certain conditions are met;
- specifies criteria to consider in selecting STEM education related instructional technology;
- provides that certain education related instructional technology may be acquired through a direct award or sole source procurement process for purposes of conducting a pilot; and
- eliminates certain duties of the State Advisory Council on Science and Technology related to science and technology fairs and camps.

Money Appropriated in this Bill:

- This bill appropriates in fiscal year 2014:
 - to Governor's Office of Economic Development - STEM Action Center, as an ongoing appropriation:
 - from the General Fund, \$1,500,000; and
 - to Governor's Office of Economic Development - STEM Action Center, as a one-time appropriation:
 - from the General Fund, \$8,500,000.

Other Special Clauses:

- This bill provides an effective date.

Utah Code Sections Affected:

AMENDS:

- 63M-1-608, as renumbered and amended by Laws of Utah 2008, Chapter 382

ENACTS:

- 63M-1-3201, Utah Code Annotated 1953
- 63M-1-3202, Utah Code Annotated 1953
- 63M-1-3203, Utah Code Annotated 1953
- 63M-1-3204, Utah Code Annotated 1953
- 63M-1-3205, Utah Code Annotated 1953
- 63M-1-3206, Utah Code Annotated 1953
- 63M-1-3207, Utah Code Annotated 1953

Be it enacted by the Legislature of the state of Utah:

Section 1. Section 63M-1-608 is amended to read:

63M-1-608. Science education program.

- (1) (a) There is established an informal science and technology education program within the Governor's Office of Economic Development.
- (b) The state science advisor shall act as the executive director of the program.
- (c) The State Advisory Council on Science and Technology shall advise the program, including:
 - (i) approving all money expended by the science and technology education program;
 - (ii) approving all operations of the program; and
 - (iii) making policies and procedures to govern the program.
- (2) The program may:
 - (a) provide informal science and technology-based education to elementary and

96 secondary students;
 97 (b) expose public education students to college level science and technology
 98 disciplines; and
 99 [(c) administer a science and technology camp program; and]
 100 [(d)] (c) provide other informal promotion of science and technology education in
 101 [this] the state[, including the direct sponsorship of science fairs and science olympiads].
 102 [(3) The science and technology camp program described under Subsection (2)(c) shall
 103 be:]
 104 [(a) provided exclusively for elementary and secondary students and their teachers;]
 105 [(b) established as a grant program for camp providers; and]
 106 [(c) administered based upon annual requests for proposals, a documented review
 107 process, and grant awards.]
 108 Section 2. Section 63M-1-3201 is enacted to read:
 109 63M-1-3201. Definitions.
 110 As used in this part:
 111 (1) "Board" means the STEM Action Center Board created in Section 63M-1-3202 .
 112 (2) "Educator" has the meaning defined in Section 53A-6-103 .
 113 (3) "Office" means the Governor's Office of Economic Development.
 114 (4) "Provider" means a provider, selected by staff of the board and staff of the Utah
 115 State Board of Education, on behalf of the board:
 116 (a) through a request for proposals process; or
 117 (b) through a direct award or sole source procurement process for a pilot described in
 118 Section 63M-1-3205 .
 119 (5) "STEM" means science, technology, engineering, and mathematics.
 120 (6) "STEM Action Center" means the center described in Section 63M-1-3204 .
 121 Section 3. Section 63M-1-3202 is enacted to read:
 122 63M-1-3202. STEM Action Center Board creation -- Membership.
 123 (1) There is created the STEM Action Center Board within the office, composed of the
 124 following members:
 125 (a) five private sector members who represent business, appointed by the governor;
 126 (b) the state superintendent of public instruction or the state superintendent of public
 127 instruction's designee;
 128 (c) the commissioner of higher education or the commissioner of higher education's
 129 designee;
 130 (d) one member appointed by the governor;
 131 (e) a member of the State Board of Education, chosen by the chair of the State Board of Education;
 132 (f) the executive director of the Governor's Office of Economic Development or the
 133 executive director of the Governor's Office of Economic Development's designee; and
 134 (g) the president of the Utah College of Applied Technology or the president of the
 135 Utah College of Applied Technology's designee.
 136 (2) (a) The private sector members appointed by the governor in Subsection (1)(a) shall
 137 represent a business whose primary focus is science, technology, or engineering.
 138 (b) Except as required by Subsection (2)(c), members appointed by the governor shall
 139 be appointed to four-year terms.
 140 (c) The length of terms of the members shall be staggered so that approximately half of
 141 the committee is appointed every two years.
 142 (d) The members may not serve more than two full consecutive terms except where the
 143 governor determines that an additional term is in the best interest of the state.
 144 (e) When a vacancy occurs in the membership for any reason, the replacement shall be
 145 appointed for the unexpired term.
 146 (3) Attendance of a simple majority of the members constitutes a quorum for the
 147 transaction of official committee business.
 148
 149

(4) Formal action by the committee requires a majority vote of a quorum.

(5) A member may not receive compensation or benefits for the member's service, but may receive per diem and travel expenses in accordance with:

- (a) Section 63A-3-106 ;
- (b) Section 63A-3-107 ; and
- (c) rules made by the Division of Finance pursuant to Sections 63A-3-106 and 63A-3-107 .

(6) The governor shall select the chair of the board to serve a one-year term.

(7) The executive director of the Governor's Office of Economic Development or the executive director of the Governor's Office of Economic Development's designee shall serve as the vice chair of the board.

(8) The state science advisor described in Section 63M-1-606 and the office shall provide staff support to the board.

Section 4. Section 63M-1-3203 is enacted to read:

63M-1-3203. STEM Action Center Board -- Duties.

(1) The board shall:

- (a) establish a STEM Action Center program to:
 - (i) coordinate STEM activities in the state among the following stakeholders:
 - (A) the State Board of Education;
 - (B) school districts and charter schools;
 - (C) the State Board of Regents;
 - (D) institutions of higher education;
 - (E) parents of home-schooled students; and
 - (F) other state agencies;
 - (ii) align public education STEM activities with higher education STEM activities; and
 - (iii) create and coordinate best practices among public education and higher education;
- (b) with the consent of the Senate, appoint an executive director to oversee the administration of the STEM Action Center;
- (c) select a physical location for the STEM Action Center;
- (d) strategically engage industry and business entities to cooperate with the board:
 - (i) to support professional development and provide other assistance for educators and students; and
 - (ii) to provide private funding and support for the STEM Action Center;
- (e) give direction to the STEM Action Center and the providers selected through a request for proposals process pursuant to this part; and
- (f) work to meet the following expectations:
 - (i) that at least 50 educators are implementing best practice learning tools in classrooms per each product specialist or manager working with the STEM Action Center;
 - (ii) performance change in student achievement in each classroom working with a STEM Action Center product specialist or manager; and
 - (iii) that students from at least 50 high schools participate in the STEM competitions, fairs, and camps described in Subsection 63M-1-3204 (2)(d).

(2) The board may:

- (a) enter into contracts for the purposes of this part;
- (b) apply for, receive, and disburse funds, contributions, or grants from any source for the purposes set forth in this part;
- (c) employ, compensate, and prescribe the duties and powers of individuals necessary to execute the duties and powers of the board;
- (d) prescribe the duties and powers of the STEM Action Center providers; and
- (e) in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, make rules to administer this part.

Section 5. Section 63M-1-3204 is enacted to read:

202 63M-1-3204. STEM Action Center.
 203 (1) As funding allows, the board shall:
 204 (a) establish a STEM Action Center;
 205 (b) ensure that the STEM Action Center:
 206 (i) is accessible by the public; and
 207 (ii) includes the components described in Subsection (2);
 208 (c) work cooperatively with the State Board of Education to acquire technology and
 209 select schools as described in Sections 63M-1-3205 and 63M-1-3206 ; and
 210 (d) engage private entities to provide financial support or employee time for STEM
 211 activities in schools in addition to what is currently provided by private entities.
 212 (2) As funding allows, the executive director of the STEM Action Center shall:
 213 (a) support professional development for educators regarding education related
 214 instructional technology that supports STEM education;
 215 (b) ensure that the STEM Action Center acts as a research and development center for
 216 education related instructional technology acquired through a request for proposals process
 217 described in Section 63M-1-3205 ;
 218 (c) review and acquire STEM education related technology for:
 219 (i) educator professional development;
 220 (ii) assessment, data collection, analysis, and reporting; and
 221 (iii) public school instruction;
 222 (d) facilitate participation in interscholastic STEM related competitions, fairs, and
 223 camps;
 224 (e) engage private industry in the development and maintenance of the STEM Action
 225 Center;
 226 (f) use resources to bring the latest STEM education learning tools into public
 227 education classrooms;
 228 (g) identify at least 10 best practice innovations used in Utah schools that have resulted
 229 in at least 80% of students performing at grade level in STEM areas;
 230 (h) identify best practices being used outside the state and implement selected practices
 231 through a pilot program;
 232 (i) identify:
 233 (i) three learning tools for kindergarten through grade 6 identified as best practices; and
 234 (ii) three learning tools per STEM subject for grades 7 through 12 identified as best
 235 practices;
 236 (j) provide a Utah best practices database, including best practices from public
 237 education, higher education, the Utah Education Network, and other STEM related entities;
 238 (k) keep track of the following items related to the best practices database described in
 239 Subsection (2)(j):
 240 (i) how the best practices database is being used; and
 241 (ii) how many individuals are using the database, including the demographics of the
 242 users, if available;
 243 (l) join and participate in a national STEM network;
 244 (m) identify performance changes linked to use of the best practices database described
 245 in Subsection (2)(j);
 246 (n) work cooperatively with the State Board of Education to designate schools as
 247 STEM schools, where the schools have agreed to adopt a plan of STEM implementation in
 248 alignment with criteria set by the State Board of Education and the board;
 249 (o) support best methods of professional development, including methods of
 250 professional development that reduce cost and increase effectiveness, to help educators learn
 251 how to most effectively implement best practice learning tools in classrooms;
 252 (p) recognize a high school's achievement in the STEM competitions, fairs, and camps
 253 described in Subsection (2)(d);

(q) send student results from STEM competitions, fairs, and camps described in Subsection (2)(d) to media and ask the media to report on them;

(r) develop and distribute STEM toolkits to parents of students being served by the STEM Action Center;

(s) support targeted professional development for improved instruction in STEM in grades 6, 7, and 8, including:

- (i) improved instructional materials that are dynamic and engaging for students;
- (ii) targeted instruction for students who traditionally avoid enrolling in STEM courses;
- (iii) introduction of engaging engineering courses; and
- (iv) introduction of other research-based methods that support student achievement in STEM areas; and

(t) ensure that an online college readiness assessment tool be accessible by:

- (i) public education students; and
- (ii) higher education students.

(3) The board may prescribe other duties for the STEM Action Center in addition to the responsibilities described in this section.

(4) (a) The executive director shall track and compare the student performance of students participating in a STEM Action Center program to all other similarly situated students in the state, in the following STEM related activities, at the beginning and end of each year:

- (i) public education high school graduation rates;
- (ii) the number of students taking a remedial mathematics course at an institution of higher education described in Section 53B-2-101 ;
- (iii) the number of students who graduate from a Utah public school and begin a postsecondary education program; and
- (iv) the number of students, as compared to all similarly situated students, who are performing at grade level in STEM classes.

(b) The State Board of Education and the State Board of Regents shall provide information to the board to assist the board in complying with the requirements of Subsection (4)(a) if allowed under federal law.

Section 6. Section 63M-1-3205 is enacted to read:

63M-1-3205. Acquisition of STEM education related instructional technology program -- Research and development of education related instructional technology through a pilot program.

(1) For purposes of this section:

- (a) "Pilot" means a pilot of the program.
- (b) "Program" means the STEM education related instructional technology program created in Subsection (2).

(2) (a) There is created the STEM education related instructional technology program to provide public schools the STEM education related instructional technology described in Subsection (3).

(b) On behalf of the board, the staff of the board and the staff of the State Board of Education shall collaborate and may select one or more providers, through a request for proposals process, to provide STEM education related instructional technology to school districts and charter schools.

(c) On behalf of the board, the staff of the board and the staff of the State Board of Education shall consider and may accept an offer from a provider in response to the request for proposals described in Subsection (2)(b) even if the provider did not participate in a pilot described in Subsection (5).

(3) The STEM education related instructional technology shall:

- (a) support mathematics instruction for students in grade 6, 7, or 8; or
- (b) support mathematics instruction for secondary students to prepare the secondary

306 students for college mathematics courses.

307 (4) In selecting a provider for STEM education related instructional technology to

308 support mathematics instruction for students in grade 6, 7, or 8 as described in Subsection

309 (3)(a), the board shall consider the following criteria:

310 (a) the technology contains individualized instructional support for skills and

311 understanding of the core standards in mathematics;

312 (b) the technology is self-adapting to respond to the needs and progress of the learner;

313 and

314 (c) the technology provides opportunities for frequent, quick, and informal assessments

315 and includes an embedded progress monitoring tool and mechanisms for regular feedback to

316 students and teachers.

317 (5) Before issuing a request for proposals described in Subsection (2), on behalf of the

318 board, the staff of the board and the staff of the State Board of Education shall collaborate and

319 may:

320 (a) conduct a pilot of the program to test and select providers for the program;

321 (b) select at least two providers through a direct award or sole source procurement

322 process for the purpose of conducting the pilot; and

323 (c) select schools to participate in the pilot.

324 (6) (a) A contract with a provider for STEM education related instructional technology

325 may include professional development for full deployment of the STEM education related

326 instructional technology.

327 (b) No more than 10% of the money appropriated for the program may be used to

328 provide professional development related to STEM education related instructional technology

329 in addition to the professional development described in Subsection (6)(a).

330 Section 7. Section 63M-1-3206 is enacted to read:

331 63M-1-3206. Distribution of STEM education instructional technology to schools.

332 (1) Subject to legislative appropriations, on behalf of the board, the staff of the board

333 and the staff of the State Board of Education shall collaborate and shall:

334 (a) distribute STEM education related instructional technology described in Section

335 63M-1-3205 to school districts and charter schools; and

336 (b) provide related professional development to the school districts and charter schools

337 that receive STEM education related instructional technology.

338 (2) A school district or charter school may apply to the board, through a competitive

339 process, to receive STEM education related instructional technology from the board.

340 (3) A school district or charter school that receives STEM education related

341 instructional technology as described in this section shall provide the school district's or charter

342 school's own computer hardware.

343 Section 8. Section 63M-1-3207 is enacted to read:

344 63M-1-3207. Report to Legislature and the State Board of Education.

345 (1) The board shall report the progress of the STEM Action Center, including the

346 information described in Subsection (2), to the following groups once each year:

347 (a) the Education Interim Committee;

348 (b) the Public Education Appropriations Subcommittee; and

349 (c) the State Board of Education.

350 (2) The report described in Subsection (1) shall include information that demonstrates

351 the effectiveness of the program, including:

352 (a) the number of educators receiving professional development;

353 (b) the number of students receiving services from the STEM Action Center;

354 (c) a list of the providers selected pursuant to this part;

355 (d) a report on the STEM Action Center's fulfillment of its duties described in

356 Subsection 63M-1-3204 ; and

357 (e) student performance of students participating in a STEM Action Center program as

collected in Subsection 63M-1-3204 (4).

Section 9. Appropriation.

Under the terms and conditions of Title 63J, Chapter 1, Budgetary Procedures Act, for the fiscal year beginning July 1, 2013, and ending June 30, 2014, the following sums of money are appropriated from resources not otherwise appropriated, or reduced from amounts previously appropriated, out of the funds or accounts indicated. These sums of money are in addition to any amounts previously appropriated for fiscal year 2014.

To Governor's Office of Economic Development - STEM Action Center

From General Fund \$1,500,000

From General Fund, one-time \$8,500,000

Schedule of Programs:

STEM Action Center \$10,000,000

The Legislature intends that:

(1) up to \$1,500,000 of the appropriation for STEM Action Center be used to establish a STEM Action Center as described in Section 63M-1-3204 ;

(2) at least \$5,000,000 of the appropriation for STEM Action Center be used for STEM education related instructional technology and related professional development to support mathematics instruction for students in grades 6, 7, or 8 as described in Subsection 63M-1-3205 (3)(a) and Section 63M-1-3206 , and related assessment, data collection, analysis, and reporting;

(3) at least \$3,500,000 of the appropriation for STEM Action Center be used for STEM education related instructional technology and related professional development to support mathematics instruction for secondary students to prepare the secondary students for college mathematics courses as described in Subsection 63M-1-3205 (3)(b) and Section 63M-1-3206 , and related assessment, data collection, analysis, and reporting;

(4) that the appropriation described in Subsection (1):

(a) be ongoing; and

(b) not lapse at the close of fiscal year 2014; and

(5) that the appropriations described in Subsections (2) and (3):

(a) be one-time; and

(b) not lapse at the close of fiscal year 2014.

Section 10. Effective date.

(1) Except as provided in Subsection (2), if approved by two-thirds of all the members elected to each house, this bill takes effect upon approval by the governor, or the day following the constitutional time limit of Utah Constitution Article VII, Section 8, without the governor's signature, or in the case of a veto, the date of veto override.

(2) Uncodified Section 9, Appropriation, takes effect on July 1, 2013.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS AMENDMENTS 2014 GENERAL SESSION STATE OF UTAH

Chief Sponsor: Val L. Peterson

Senate Sponsor: Stephen H. Urquhart

25 This bill amends and enacts provisions relating to the Science, Technology,
26 Engineering, and Mathematics Action Center.
27 Highlighted Provisions:
28 This bill:
29 . defines terms;
30 . adds members to the STEM Action Center Board;
31 . allows the STEM Action Center Board to create a foundation;
32 . specifies that the STEM Action Center shall support high quality professional
33 development for educators related to STEM education in kindergarten through
34 grade 12;
35 . allows the STEM Action Center to further STEM education with nontechnological
36 means;
37 . expands the scope of the STEM education related technology program to more
38 students;
39 . creates the STEM education endorsements and incentive program, and requires the
40 State Board of Education to make rules regarding the endorsements;
41 . requires the STEM Action Center to select technology providers to create a certain
42 professional development application;
43 . requires the STEM Action Center to create in-person STEM education high quality
44 professional development;
45 . creates the STEM education middle school applied science initiative;
46 . creates the high school STEM education initiative; and
47 . makes technical changes.
48 Money Appropriated in this Bill:
49 This bill appropriates in fiscal year 2015:
50 . to the Governor's Office of Economic Development - STEM Action Center, as an
51 ongoing appropriation:
52 . from the General Fund, \$5,000,000; and
53 . to the Governor's Office of Economic Development - STEM Action Center, as a
54 one-time appropriation:
55 . from the General Fund, \$15,000,000.
56 Other Special Clauses:
57 This bill provides an effective date.
58 Utah Code Sections Affected:
59 AMENDS:
60 63M-1-3201 , as enacted by Laws of Utah 2013, Chapter 336
61 63M-1-3202 , as enacted by Laws of Utah 2013, Chapter 336
62 63M-1-3203 , as enacted by Laws of Utah 2013, Chapter 336
63 63M-1-3204 , as enacted by Laws of Utah 2013, Chapter 336
64 63M-1-3205 , as enacted by Laws of Utah 2013, Chapter 336
65 63M-1-3207 , as enacted by Laws of Utah 2013, Chapter 336

ENACTS:

63M-1-3208 , Utah Code Annotated 1953
63M-1-3209 , Utah Code Annotated 1953
63M-1-3210 , Utah Code Annotated 1953
63M-1-3211 , Utah Code Annotated 1953

Be it enacted by the Legislature of the state of Utah:

Section 1. Section 63M-1-3201 is amended to read:

63M-1-3201. Definitions.

As used in this part:

(1) "Board" means the STEM Action Center Board created in Section 63M-1-3202 .

(2) "Educator" has the meaning defined in Section 53A-6-103 .

(3) "High quality professional development" means professional development that meets high quality standards developed by the State Board of Education.

[(3)] (4) "Office" means the Governor's Office of Economic Development.

[(4)] (5) "Provider" means a provider, selected by staff of the board and staff of the Utah State Board of Education, on behalf of the board:

(a) through a request for proposals process; or

(b) through a direct award or sole source procurement process for a pilot described in Section 63M-1-3205 .

[(5)] (6) "STEM" means science, technology, engineering, and mathematics.

[(6)] (7) "STEM Action Center" means the center described in Section 63M-1-3204 .

Section 2. Section 63M-1-3202 is amended to read:

63M-1-3202. STEM Action Center Board creation -- Membership.

(1) There is created the STEM Action Center Board within the office, composed of the following members:

(a) [five] six private sector members who represent business, appointed by the governor;

(b) the state superintendent of public instruction or the state superintendent of public instruction's designee;

(c) the commissioner of higher education or the commissioner of higher education's designee;

(d) one member appointed by the governor;

(e) a member of the State Board of Education, chosen by the chair of the State Board of Education;

(f) the executive director of the Governor's Office of Economic Development or the executive director of the Governor's Office of Economic Development's designee; [and]

(g) the president of the Utah College of Applied Technology or the president of the Utah College of Applied Technology's designee[.]; and

(h) one member who has a degree in engineering and experience working in a government military installation, appointed by the governor.

(2) (a) The private sector members appointed by the governor in Subsection (1)(a) shall represent a business or trade association whose primary focus is science, technology, or engineering.

(b) Except as required by Subsection (2)(c), members appointed by the governor shall be appointed to four-year terms.

(c) The length of terms of the members shall be staggered so that approximately half of the committee is appointed every two years.

(d) The members may not serve more than two full consecutive terms except where the governor determines that an additional term is in the best interest of the state.

(e) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term.

118 (3) Attendance of a simple majority of the members constitutes a quorum for the
 119 transaction of official committee business.

120 (4) Formal action by the committee requires a majority vote of a quorum.

121 (5) A member may not receive compensation or benefits for the member's service, but
 122 may receive per diem and travel expenses in accordance with:

123 (a) Section 63A-3-106 ;
 124 (b) Section 63A-3-107 ; and
 125 (c) rules made by the Division of Finance pursuant to Sections 63A-3-106 and
 126 63A-3-107 .

127 (6) The governor shall select the chair of the board to serve a one-year term.

128 (7) The executive director of the Governor's Office of Economic Development or the
 129 executive director of the Governor's Office of Economic Development's designee shall serve as
 130 the vice chair of the board.

131 [(8) The state science advisor described in Section 63M-1-606 and the office shall
 132 provide staff support to the board.]

133 Section 3. Section 63M-1-3203 is amended to read:
 134 63M-1-3203. STEM Action Center Board -- Duties.

135 (1) The board shall:

136 (a) establish a STEM Action Center program to:

137 (i) coordinate STEM activities in the state among the following stakeholders:

138 (A) the State Board of Education;
 139 (B) school districts and charter schools;
 140 (C) the State Board of Regents;
 141 (D) institutions of higher education;
 142 (E) parents of home-schooled students; and
 143 (F) other state agencies;

144 (ii) align public education STEM activities with higher education STEM activities; and
 145 (iii) create and coordinate best practices among public education and higher education;

146 (b) with the consent of the Senate, appoint an executive director to oversee the
 147 administration of the STEM Action Center;

148 (c) select a physical location for the STEM Action Center;

149 (d) strategically engage industry and business entities to cooperate with the board:

150 (i) to support high quality professional development and provide other assistance for
 151 educators and students; and

152 (ii) to provide private funding and support for the STEM Action Center;

153 (e) give direction to the STEM Action Center and the providers selected through a
 154 request for proposals process pursuant to this part; and

155 (f) work to meet the following expectations:

156 (i) that at least 50 educators are implementing best practice learning tools in
 157 classrooms per each product specialist or manager working with the STEM Action Center;

158 (ii) performance change in student achievement in each classroom working with a
 159 STEM Action Center product specialist or manager; and

160 (iii) that students from at least 50 high schools participate in the STEM competitions,
 161 fairs, and camps described in Subsection 63M-1-3204 (2)(d).

162 (2) The board may:

163 (a) enter into contracts for the purposes of this part;

164 (b) apply for, receive, and disburse funds, contributions, or grants from any source for
 165 the purposes set forth in this part;

166 (c) employ, compensate, and prescribe the duties and powers of individuals necessary
 167 to execute the duties and powers of the board;

168 (d) prescribe the duties and powers of the STEM Action Center providers; and
 169 (e) in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act,

make rules to administer this part.

(3) The board may establish a foundation to assist in:

(a) the development and implementation of the programs authorized under this part to promote STEM education; and

(b) implementation of other STEM education objectives described in this part.

(4) A foundation established by the board under Subsection (3):

(a) may solicit and receive contributions from a private organization for STEM education objectives described in this part;

(b) shall comply with Title 51, Chapter 7, State Money Management Act;

(c) does not have power or authority to incur contractual obligations or liabilities that constitute a claim against public funds;

(d) may not exercise executive or administrative authority over the programs or other activities described in this part, except to the extent specifically authorized by the board;

(e) shall provide the board with information detailing transactions and balances of funds managed for the board; and

(f) may not:

(i) engage in lobbying activities;

(ii) attempt to influence legislation; or

(iii) participate in any campaign activity for or against:

(A) a political candidate; or

(B) an initiative, referendum, proposed constitutional amendment, bond, or any other ballot proposition submitted to the voters.

(5) Money donated to a foundation established under Subsection (3) may be accounted for in an expendable special revenue fund.

Section 4. Section 63M-1-3204 is amended to read:

63M-1-3204. STEM Action Center.

(1) As funding allows, the board shall:

(a) establish a STEM Action Center;

(b) ensure that the STEM Action Center:

(i) is accessible by the public; and

(ii) includes the components described in Subsection (2);

(c) work cooperatively with the State Board of Education to [acquire technology and select schools]:

(i) further STEM education; and

(ii) ensure best practices are implemented as described in Sections 63M-1-3205 and 63M-1-3206 ; and

(d) engage private entities to provide financial support or employee time for STEM activities in schools in addition to what is currently provided by private entities.

(2) As funding allows, the executive director of the STEM Action Center shall:

(a) support high quality professional development for educators regarding [education related instructional technology that supports] STEM education;

(b) ensure that the STEM Action Center acts as a research and development center for STEM education [related instructional technology acquired] through a request for proposals process described in Section 63M-1-3205 ;

(c) review and acquire STEM education related [technology] materials and products for:

(i) [educator] high quality professional development;

(ii) assessment, data collection, analysis, and reporting; and

(iii) public school instruction;

(d) facilitate participation in interscholastic STEM related competitions, fairs, [and] camps, and STEM education activities;

(e) engage private industry in the development and maintenance of the STEM Action

Center and STEM Action Center projects;

- (f) use resources to bring the latest STEM education learning tools into public education classrooms;
- (g) identify at least 10 best practice innovations used in Utah [schools] that have resulted in at least 80% of students performing at grade level in STEM areas;
- (h) identify best practices being used outside the state and, as appropriate, develop and implement selected practices through a pilot program;
- (i) identify:
 - (i) [three] learning tools for kindergarten through grade 6 identified as best practices; and
 - (ii) [three] learning tools [per STEM subject] for grades 7 through 12 identified as best practices;
- (j) provide a Utah best practices database, including best practices from public education, higher education, the Utah Education Network, and other STEM related entities;
- (k) keep track of the following items related to the best practices database described in Subsection (2)(j):
 - (i) how the best practices database is being used; and
 - (ii) how many individuals are using the database, including the demographics of the users, if available;
- (l) as appropriate, join and participate in a national STEM network;
- (m) identify performance changes linked to use of the best practices database described in Subsection (2)(j);
- (n) work cooperatively with the State Board of Education to designate schools as STEM schools, where the schools have agreed to adopt a plan of STEM implementation in alignment with criteria set by the State Board of Education and the board;
- (o) support best methods of high quality professional development[,] for STEM education in kindergarten through grade 12, including methods of high quality professional development that reduce cost and increase effectiveness, to help educators learn how to most effectively implement best practice learning tools in classrooms;
- (p) recognize a high school's achievement in the STEM competitions, fairs, and camps described in Subsection (2)(d);
- (q) send student results from STEM competitions, fairs, and camps described in Subsection (2)(d) to media and ask the media to report on them;
- (r) develop and distribute STEM [toolkits] information to parents of students being served by the STEM Action Center;
- (s) support targeted high quality professional development for improved instruction in STEM [in grades 6, 7, and 8] education, including:
 - (i) improved instructional materials that are dynamic and engaging for students;
 - [(ii)] targeted instruction for students who traditionally avoid enrolling in STEM courses;]
 - [(iii)] introduction of engaging engineering courses; and]
 - (ii) use of applied instruction; and
 - [(iv)] (iii) introduction of other research-based methods that support student achievement in STEM areas; and
- (t) ensure that an online college readiness assessment tool be accessible by:
 - (i) public education students; and
 - (ii) higher education students.

(3) The board may prescribe other duties for the STEM Action Center in addition to the responsibilities described in this section.

(4) (a) The executive director shall track and compare the student performance of students participating in a STEM Action Center program to all other similarly situated students in the state, in the following STEM related activities, at the beginning and end of each year:

(i) public education high school graduation rates;

(ii) the number of students taking a remedial mathematics course at an institution of higher education described in Section 53B-2-101 ;

(iii) the number of students who graduate from a Utah public school and begin a postsecondary education program; and

(iv) the number of students, as compared to all similarly situated students, who are performing at grade level in STEM classes.

(b) The State Board of Education and the State Board of Regents shall provide information to the board to assist the board in complying with the requirements of Subsection (4)(a) if allowed under federal law.

Section 5. Section 63M-1-3205 is amended to read:

63M-1-3205. Acquisition of STEM education related instructional technology program -- Research and development of education related instructional technology through a pilot program.

(1) For purposes of this section:

(a) "Pilot" means a pilot of the program.

(b) "Program" means the STEM education related instructional technology program created in Subsection (2).

(2) (a) There is created the STEM education related instructional technology program to provide public schools the STEM education related instructional technology described in Subsection (3).

(b) On behalf of the board, the staff of the board and the staff of the State Board of Education shall collaborate and may select one or more providers, through a request for proposals process, to provide STEM education related instructional technology to school districts and charter schools.

(c) On behalf of the board, the staff of the board and the staff of the State Board of Education shall consider and may accept an offer from a provider in response to the request for proposals described in Subsection (2)(b) even if the provider did not participate in a pilot described in Subsection (5).

(3) The STEM education related instructional technology shall:

(a) support mathematics instruction for students in [grade 6, 7, or 8; or]:

(i) kindergarten through grade 6; or

(ii) grades 7 and 8; or

(b) support mathematics instruction for secondary students to prepare the secondary students for college mathematics courses.

(4) In selecting a provider for STEM education related instructional technology to support mathematics instruction for the students [in grade 6, 7, or 8 as] described in Subsection (3)(a), the board shall consider the following criteria:

(a) the technology contains individualized instructional support for skills and understanding of the core standards in mathematics;

(b) the technology is self-adapting to respond to the needs and progress of the learner; and

(c) the technology provides opportunities for frequent, quick, and informal assessments and includes an embedded progress monitoring tool and mechanisms for regular feedback to students and teachers.

(5) Before issuing a request for proposals described in Subsection (2), on behalf of the board, the staff of the board and the staff of the State Board of Education shall collaborate and may:

(a) conduct a pilot of the program to test and select providers for the program;

(b) select at least two providers through a direct award or sole source procurement process for the purpose of conducting the pilot; and

(c) select schools to participate in the pilot.

326 (6) (a) A contract with a provider for STEM education related instructional technology
 327 may include professional development for full deployment of the STEM education related
 328 instructional technology.

329 (b) No more than 10% of the money appropriated for the program may be used to
 330 provide professional development related to STEM education related instructional technology
 331 in addition to the professional development described in Subsection (6)(a).

332 Section 6. Section 63M-1-3207 is amended to read:
 333 63M-1-3207. Report to Legislature and the State Board of Education.

334 (1) The board shall report the progress of the STEM Action Center, including the
 335 information described in Subsection (2), to the following groups once each year:

336 (a) the Education Interim Committee;
 337 (b) the Public Education Appropriations Subcommittee; and
 338 (c) the State Board of Education.

339 (2) The report described in Subsection (1) shall include information that demonstrates
 340 the effectiveness of the program, including:

341 (a) the number of educators receiving high quality professional development;
 342 (b) the number of students receiving services from the STEM Action Center;
 343 (c) a list of the providers selected pursuant to this part;
 344 (d) a report on the STEM Action Center's fulfillment of its duties described in
 345 Subsection 63M-1-3204 ; and

346 (e) student performance of students participating in a STEM Action Center program as
 347 collected in Subsection 63M-1-3204 (4).

348 Section 7. Section 63M-1-3208 is enacted to read:
 349 63M-1-3208. STEM education endorsements and incentive program.

350 (1) The State Board of Education shall collaborate with the STEM Action Center to:

351 (a) develop STEM education endorsements; and
 352 (b) create and implement financial incentives for:

353 (i) an educator to earn an elementary or secondary STEM education endorsement
 354 described in Subsection (1)(a); and
 355 (ii) a school district or a charter school to have STEM endorsed educators on staff.

356 (2) In accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, the
 357 State Board of Education shall make rules to establish how a STEM education endorsement
 358 incentive described in Subsection (1)(a) will be valued on a salary scale for educators.

359 Section 8. Section 63M-1-3209 is enacted to read:
 360 63M-1-3209. Acquisition of STEM education high quality professional
 361 development.

362 (1) The STEM Action Center shall, through a request for proposals process, select
 363 technology providers for the purpose of providing a STEM education high quality professional
 364 development application.

365 (2) The high quality professional development application described in Subsection (1)
 366 shall:

367 (a) allow the State Board of Education, a school district, or a school to define the
 368 application's input and track results of the high quality professional development;
 369 (b) allow educators to access automatic tools, resources, and strategies;
 370 (c) allow educators to work in online learning communities, including giving and
 371 receiving feedback via uploaded video;
 372 (d) track and report data on the usage of the components of the application's system
 373 and the relationship to improvement in classroom instruction;
 374 (e) include video examples of highly effective STEM education teaching that:
 375 (i) cover a cross section of grade levels and subjects;
 376 (ii) under the direction of the State Board of Education, include videos of highly
 377 effective Utah STEM educators; and

(iii) contain tools to help educators implement what they have learned; and
(f) allow for additional STEM education video content to be added.
(3) In addition to the high quality professional development application described in Subsections (1) and (2), the STEM Action Center may create STEM education hybrid or blended high quality professional development that allows for face-to-face applied learning.

Section 9. Section 63M-1-3210 is enacted to read:

63M-1-3210. STEM education middle school applied science initiative.

(1) The STEM Action Center shall develop an applied science initiative for students in grades 7 and 8 that includes:

- (a) a STEM applied science curriculum with instructional materials;
- (b) STEM hybrid or blended high quality professional development that allows for face-to-face applied learning; and
- (c) hands-on tools for STEM applied science learning.

(2) The STEM Action Center may, through a request for proposals process, select a consultant to assist in developing the initiative described in Subsection (1).

Section 10. Section 63M-1-3211 is enacted to read:

63M-1-3211. High school STEM education initiative.

(1) Subject to legislative appropriations, after consulting with State Board of Education staff, the STEM Action Center shall award grants to school districts and charter schools to fund STEM related certification for high school students.

(2) (a) A school district or charter school may apply for a grant from the STEM Action Center, through a competitive process, to fund the school district's or charter school's STEM related certification training program.

(b) A school district's or charter school's STEM related certification training program shall:

- (i) prepare high school students to be job ready for available STEM related positions of employment; and
- (ii) when a student completes the program, result in the student gaining a nationally industry-recognized employer STEM related certification.

(3) A school district or charter school may partner with one or more of the following to provide a STEM related certification program:

- (a) a Utah College of Applied Technology college campus;
- (b) Salt Lake Community College;
- (c) Snow College; or
- (d) a private sector employer.

Section 11. Appropriation.

Under the terms and conditions of Title 63J, Chapter 1, Budgetary Procedures Act, for the fiscal year beginning July 1, 2014, and ending June 30, 2015, the following sums of money are appropriated from resources not otherwise appropriated, or reduced from amounts previously appropriated, out of the funds or accounts indicated. These sums of money are in addition to any amounts previously appropriated for fiscal year 2015.

To Governor's Office of Economic Development - STEM Action Center

From General Fund	\$5,000,000
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From General Fund, One-time	\$15,000,000
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Schedule of Programs:

STEM Action Center	\$20,000,000
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The Legislature intends that:

(1) up to \$5,000,000 of the appropriation for the STEM Action Center program be used for STEM education related instructional technology and related professional development to support mathematics instruction as described in Subsection 63M-1-3205 (3)(a)(i) and Section 63M-1-3206, and related assessment, data collection, analysis, and reporting;

(2) up to \$1,500,000 of the appropriation for the STEM Action Center program be used

430 for developing the STEM education endorsements and related incentive program described in
431 Section 63M-1-3208;
432 (3) up to \$5,000,000 of the appropriation for the STEM Action Center program be used
433 for providing a STEM education high quality professional development application as
434 described in Section 63M-1-3209;
435 (4) up to \$3,500,000 of the appropriation for the STEM Action Center program be used
436 to fund the STEM education middle school applied science initiative described in Section
437 63M-1-3210;
438 (5) up to \$5,000,000 of the appropriation for the STEM Action Center program be used
439 to fund the high school STEM education initiative described in Section 63M-1-3211 ;
440 (6) the appropriations described in Subsections (1), (2), (4), and (5):
441 (a) are one-time; and
442 (b) not lapse at the close of fiscal year 2015; and
443 (7) the appropriation described in Subsection (3):
444 (a) is ongoing; and
445 (b) not lapse at the close of fiscal year 2015.
446 Section 12. Effective date.
447 (1) Except as provided in Subsection (2), if approved by two-thirds of all the members
448 elected to each house, this bill takes effect upon approval by the governor, or the day following
449 the constitutional time limit of Utah Constitution, Article VII, Section 8, without the governor's
450 signature, or in the case of a veto, the date of veto override.
451 (2) Uncodified Section 11, Appropriation, takes effect on July 1, 2014.

STEM PROGRAM AMENDMENTS 2016 GENERAL SESSION STATE OF UTAH Chief Sponsor: Val L. Peterson Senate Sponsor: Stephen H. Urquhart

LONG TITLE

General Description:

This bill modifies provisions related to the STEM (Science, Technology, Engineering, and Mathematics) Action Center.

Highlighted Provisions:

This bill:

⇒ defines terms;

⇒ modifies:

- the membership and duties of the STEM Action Center Board;
- the duties of the director of the STEM Action Center; and
- the rulemaking authority of the State Board of Education related to the award of STEM education endorsement incentives;

⇒ adds Utah State University Eastern to the list of educational institutions that may partner with a school district or charter school to provide a STEM related certification program; and

⇒ makes technical changes.

Money Appropriated in this Bill:

None

Other Special Clauses:

None

Utah Code Sections Affected:

AMENDS:

63N-12-203, as renumbered and amended by Laws of Utah 2015, Chapter 283

63N-12-204, as renumbered and amended by Laws of Utah 2015, Chapter 283

63N-12-205, as renumbered and amended by Laws of Utah 2015, Chapter 283

63N-12-209, as last amended by Laws of Utah 2015, Chapter 258 and renumbered and amended by Laws of Utah 2015, Chapter 283

63N-12-210, as renumbered and amended by Laws of Utah 2015, Chapter 283

63N-12-212, as renumbered and amended by Laws of Utah 2015, Chapter 283

Be it enacted by the Legislature of the state of Utah:

Section 1. Section **63N-12-203** is amended to read:

63N-12-203. STEM Action Center Board creation — Membership.

(1) There is created the STEM Action Center Board within the office, composed of the following members:

(a) six private sector members who represent business, appointed by the governor;

(b) the state superintendent of public instruction or the state superintendent of public instruction's designee;

(c) the commissioner of higher education or the commissioner of higher education's designee;

(d) one member appointed by the governor;

(e) a member of the State Board of Education, chosen by the chair of the State Board of Education;

(f) the executive director of the office or the executive director's designee;

(g) the president of the Utah College of Applied Technology or the president of the Utah College of Applied Technology's designee; ~~and~~

(h) the executive director of the Department of Workforce Services or the executive director of the Department of Workforce Services' designee; and

~~[(h)]~~ (i) one member who has a degree in engineering and experience working in a government military installation, appointed by the governor.

(2) (a) The private sector members appointed by the governor in Subsection (1)(a) shall represent a business or trade association whose primary focus is science, technology, or engineering.

(b) Except as required by Subsection (2)(c), members appointed by the governor shall be appointed to four-year terms.

(c) The length of terms of the members shall be staggered so that approximately half of the committee is appointed every two years.

(d) The members may not serve more than two full consecutive terms except where the governor determines that an additional term is in the best interest of the state.

(e) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term.

(3) Attendance of a simple majority of the members constitutes a quorum for the transaction of official committee business.

(4) Formal action by the committee requires a majority vote of a quorum.

(5) A member may not receive compensation or benefits for the member's service, but may receive per diem and travel expenses in accordance with:

(a) Section 63A-3-106;

(b) Section 63A-3-107; and

(c) rules made by the Division of Finance under Sections 63A-3-106 and 63A-3-107.

(6) The governor shall select the chair of the board to serve a ~~[one-year]~~ two-year term.

(7) The executive director of the office or the executive director's designee shall serve as the vice chair of the board.

Section 2. Section **63N-12-204** is amended to read:

63N-12-204. STEM Action Center Board — Duties.

(1) The board shall:

(a) establish a STEM Action Center to:

(i) coordinate STEM activities in the state among the following stakeholders:

(A) the State Board of Education;

(B) school districts and charter schools;

(C) the State Board of Regents;

(D) institutions of higher education;

(E) parents of home-schooled students; ~~and~~

(F) other state agencies; and

(G) business and industry representatives;

(ii) align public education STEM activities with higher education STEM activities; and

(iii) create and coordinate best practices among public education and higher education;

(b) with the consent of the Senate, appoint a director to oversee the administration of the STEM Action Center;

(c) select a physical location for the STEM Action Center;

(d) strategically engage industry and business entities to cooperate with the board:

(i) to support high quality professional development and provide other assistance for educators and students; and

(ii) to provide private funding and support for the STEM Action Center;

(e) give direction to the STEM Action Center and the providers selected through a request for proposals process pursuant to this part; and

(f) work to meet the following expectations:

- (i) that at least 50 educators are implementing best practice learning tools in classrooms ~~[per each product specialist or manager working with the STEM Action Center];~~
- (ii) performance change in student achievement in each classroom ~~[working with]~~ participating in a STEM Action Center ~~[product specialist or manager]~~ project; and
- (iii) that students from at least 50 ~~[high]~~ in the state schools participate in the STEM competitions, fairs, and camps described in Subsection 63N-12-205(2)(d).

(2) The board may:

- (a) enter into contracts for the purposes of this part;
- (b) apply for, receive, and disburse funds, contributions, or grants from any source for the purposes set forth in this part;
- (c) employ, compensate, and prescribe the duties and powers of individuals necessary to execute the duties and powers of the board;
- (d) prescribe the duties and powers of the STEM Action Center providers; and
- (e) in accordance with Title 63 G, Chapter 3, Utah Administrative Rulemaking Act, make rules to administer this part.

(3) The board may establish a foundation to assist in:

- (a) the development and implementation of the programs authorized under this part to promote STEM education; and
- (b) implementation of other STEM education objectives described in this part.

(4) A foundation established by the board under Subsection (3):

- (a) may solicit and receive contributions from a private organization for STEM education objectives described in this part;
- (b) shall comply with Title 51, Chapter 7, State Money Management Act;
- (c) does not have power or authority to incur contractual obligations or liabilities that constitute a claim against public funds;
- (d) may not exercise executive or administrative authority over the programs or other activities described in this part, except to the extent specifically authorized by the board;
- (e) shall provide the board with information detailing transactions and balances of funds managed for the board; and
- (f) may not:
 - (i) engage in lobbying activities;
 - (ii) attempt to influence legislation; or
 - (iii) participate in any campaign activity for or against:
 - (A) a political candidate; or
 - (B) an initiative, referendum, proposed constitutional amendment, bond, or any other ballot proposition submitted to the voters.

(5) Money donated to a foundation established under Subsection (3) maybe accounted for in an expendable special revenue fund.

Section 3, Section **63N-12-205** is amended to read:

63N-12-205. STEM Action Center.

- (1) As funding allows, the board shall:
 - (a) establish a STEM Action Center;
 - (b) ensure that the STEM Action Center:
 - (i) is accessible by the public; and
 - (ii) includes the components described in Subsection (2);
 - (c) work cooperatively with the State Board of Education to:
 - (i) further STEM education; and
 - (ii) ensure best practices are implemented as described in Sections 63N-12-206 and 63N-12-207; ~~[and]~~
 - (d) engage private entities to provide financial support or employee time for STEM activities in schools in addition to what is currently provided by private entities~~[-]; and~~

154 (e) work cooperatively with stakeholders to support and promote activities that align
 155 STEM education and training activities with the employment needs of business and industry in
 156 the state.

157 (2) As funding allows, the director of the STEM Action Center shall:

158 (a) support high quality professional development for educators regarding STEM
 159 education;

160 (b) ensure that the STEM Action Center acts as a research and development center for
 161 STEM education through a request for proposals process described in Section 63N-12-206;

162 (c) review and acquire STEM education related materials and products for:

163 (i) high quality professional development;

164 (ii) assessment, data collection, analysis, and reporting; and

165 (iii) public school instruction;

166 (d) facilitate participation in interscholastic STEM related competitions, fairs, camps,
 167 and STEM education activities;

168 (e) engage private industry in the development and maintenance of the STEM Action
 169 Center and STEM Action Center projects;

170 (f) use resources to bring the latest STEM education learning tools into public
 171 education classrooms;

172 (g) identify at least 10 best practice innovations used in Utah that have resulted in ~~[at~~
 173 ~~least 80% of students performing at grade level]~~ a measurable improvement in student
 174 performance or outcomes in STEM areas;

175 (h) identify best practices being used outside the state and, as appropriate, develop and
 176 implement selected practices through a pilot program;

177 (i) identify:

178 (i) learning tools for kindergarten through grade 6 identified as best practices; and

179 (ii) learning tools for grades 7 through 12 identified as best practices;

180 (j) ~~[provide a]~~ collect data on Utah best practices ~~[database]~~, including best practices
 181 from public education, higher education, the Utah Education and Telehealth Network, and
 182 other STEM related entities;

183 (k) keep track of the following items related to ~~[the]~~ best practices ~~[database]~~ described
 184 in Subsection (2)(j):

185 (i) how the best practices ~~[database is]~~ data are being used; and

186 (ii) how many individuals are using the ~~[database]~~ data, including the demographics of
 187 the users, if available;

188 (l) as appropriate, join and participate in a national STEM network;

189 ~~[(m)]~~ ~~identify performance changes linked to use of the best practices database~~
 190 ~~described in Subsection (2)(j);]~~

191 ~~[(n)]~~ (m) work cooperatively with the State Board of Education to designate schools as
 192 STEM schools, where the schools have agreed to adopt a plan of STEM implementation in
 193 alignment with criteria set by the State Board of Education and the board;

194 ~~[(o)]~~ (n) support best methods of high quality professional development for STEM
 195 education in kindergarten through grade 12, including methods of high quality professional
 196 development that reduce cost and increase effectiveness, to help educators learn how to most
 197 effectively implement best practice learning tools in classrooms;

198 ~~[(p)]~~ (o) recognize ~~[a high school's]~~ achievement in the STEM competitions, fairs, and
 199 camps described in Subsection (2)(d);

200 ~~[(q)]~~ (p) send student results from STEM competitions, fairs, and camps described in
 201 Subsection (2)(d) to media and ask the media to report on them;

202 ~~[(r)]~~ (q) develop and distribute STEM information to parents of students ~~[being served~~
 203 ~~by the STEM Action Center]~~ in the state;

204 ~~[(s)]~~ (r) support targeted high quality professional development for improved
 205 instruction in STEM education, including:

(i) improved instructional materials that are dynamic and engaging for students;
(ii) use of applied instruction; and
(iii) introduction of other research-based methods that support student achievement in STEM areas; and

~~[(t)]~~ (s) ensure that an online college readiness assessment tool be accessible by:

(i) public education students; and

(ii) higher education students.

(3) The board may prescribe other duties for the STEM Action Center in addition to the responsibilities described in this section.

(4) (a) The director shall work with an independent evaluator to track and compare the student performance of students participating in a STEM Action Center program to all other similarly situated students in the state, if appropriate, in the following [STEM-related] activities~~[-, at the beginning and end of each year]~~:

(i) public education high school graduation rates;

(ii) the number of students taking a remedial mathematics course at an institution of higher education described in Section 53B-2-101;

(iii) the number of students who graduate from a Utah public school and begin a postsecondary education program; and

(iv) the number of students, as compared to all similarly situated students, who are performing at grade level in STEM classes.

(b) The State Board of Education and the State Board of Regents shall provide information to the board to assist the board in complying with the requirements of Subsection (4)(a) if allowed under federal law.

Section 4. Section **63N-12-209** is amended to read:

63N-12-209. STEM education endorsements and incentive program.

(1) The State Board of Education shall collaborate with the STEM Action Center to:

(a) develop STEM education endorsements; and

(b) create and implement financial incentives for:

(i) an educator to earn an elementary or secondary STEM education endorsement described in Subsection (1)(a); and

(ii) a school district or a charter school to have STEM endorsed educators on staff.

(2) In accordance with Title 63 G, Chapter 3, Utah Administrative Rulemaking Act, the State Board of Education shall make rules ~~[to establish how a]~~ establishing the uses of STEM education ~~[endorsement]~~ endorsements described in Subsection (1) ~~[will be valued on a salary scale for educators.]~~, including that:

(a) an incentive for an educator to take a course leading to a STEM education endorsement may only be given for a course that carries higher-education credit; and

(b) a school district or a charter school may consider a STEM education endorsement as part of an educator's salary schedule.

Section 5. Section **63N-12-210** is amended to read:

63N-12-210. Acquisition of STEM education high quality professional development.

(1) The STEM Action Center shall, through a request for proposals process, select technology providers for the purpose of providing a STEM education high quality professional development application.

(2) The high quality professional development application described in Subsection (1) shall:

(a) allow the State Board of Education, a school district, or a school to define the application's input and track results of the high quality professional development;

(b) allow educators to access automatic tools, resources, and strategies, including instructional materials with integrated STEM content;

(c) allow educators to work in online learning communities, including giving and

258 receiving feedback via uploaded video;
 259 (d) track and report data on the usage of the components of the application's system
 260 and the relationship to improvement in classroom instruction;
 261 (e) include video examples of highly effective STEM education teaching that:
 262 (i) cover across section of grade levels and subjects;
 263 (ii) under the direction of the State Board of Education, include videos of highly
 264 effective Utah STEM educators; and
 265 (iii) contain tools to help educators implement what they have learned; and
 266 (f) allow for additional STEM education video content to be added.
 267 (3) In addition to the high quality professional development application described in
 268 Subsections (1) and (2), the STEM Action Center may create STEM education hybrid or
 269 blended high quality professional development that allows for face-to-face applied learning.
 270 Section 6. Section **63N-12-212** is amended to read:
 271 **63N-12-212. High school STEM education initiative.**
 272 (1) Subject to legislative appropriations, after consulting with State Board of Education
 273 staff, the STEM Action Center shall award grants to school districts and charter schools to fund
 274 STEM related certification for high school students.
 275 (2) (a) A school district or charter school may apply for a grant from the STEM Action
 276 Center, through a competitive process, to fund the school district's or charter school's STEM
 277 related certification training program.
 278 (b) A school district's or charter school's STEM related certification training program
 279 shall:
 280 (i) prepare high school students to be job ready for available STEM related positions of
 281 employment; and
 282 (ii) when a student completes the program, result in the student gaining ~~[a nationally]~~
 283 an industry-recognized employer STEM related certification.
 284 (3) A school district or charter school may partner with one or more of the following to
 285 provide a STEM related certification program:
 286 (a) a Utah College of Applied Technology college campus;
 287 (b) Salt Lake Community College;
 288 (c) Snow College; ~~[or]~~
 289 (d) Utah State University Eastern; or
 290 ~~[(d)]~~ (e) a private sector employer.

**EDUCATION COMPUTING PARTNERSHIPS
2017 GENERAL SESSION
STATE OF UTAH**

**Chief Sponsor: Ralph Okerlund
House Sponsor: Bradley G. Last
Cosponsor: Howard A. Stephenson**

8 LONG TITLE
9 General Description:
10 This bill creates the Computing Partnerships Grants program.
11 Highlighted Provisions:
12 This bill:
13 < creates the Computing Partnerships Grants program, administered by the STEM
14 Action Center;
15 < authorizes the STEM Action Center to work with the State Board of Education to:
16 adopt rules for the administration of the grant program;
17 establish a grant application process; and
18 establish a review committee; and
19 < requires the STEM Action Center to annually report on the grant program to the
20 Education Interim Committee.
21 Money Appropriated in this Bill:
22 None
23 Other Special Clauses:
24 None
25 Utah Code Sections Affected:
26 AMENDS:
27 63N-12-202, as renumbered and amended by Laws of Utah 2015, Chapter 283
28 ENACTS:
29 63N-12-214, Utah Code Annotated 1953
30
31 Be it enacted by the Legislature of the state of Utah:
32 Section 1. Section 63N-12-202 is amended to read:
33 63N-12-202. Definitions.
34 As used in this part:
35 (1) "Board" means the STEM Action Center Board created in Section 63N-12-203.
36 (2) "Computing partnerships" means a set of skills, knowledge, and aptitudes used in
37 computer science, information technology, or computer engineering courses and career options.
38 [(2)] (3) "Educator" [has the same meaning as] means the same as that term is defined
39 in Section 53A-6-103.
40 (4) "Grant program" means the Computing Partnerships Grants program created in this
41 part.
42 [(3)] (5) "High quality professional development" means professional development that
43 high quality standards developed by the State Board of Education.
44 (6) "Institution of higher education" means an institution listed in Section 53B-1-102.
45 (7) "K-16" means kindergarten through grade 12 and post-secondary education
46 programs.
47 [(4)] (8) "Office" means the Governor's Office of Economic Development.
48 [(5)] (9) "Provider" means a provider, selected by staff of the board and staff of the

49 Utah State Board of Education, on behalf of the board:
50 (a) through a request for proposals process; or
51 (b) through a direct award or sole source procurement process for a pilot described in
52 Section 63N-12-206.

53 (10) "Review committee" means the committee established under Section 63N-12-214.
54 (11) "Stacked credentials" means credentials that:
55 (a) an individual can build upon to access an advanced job or higher wage;
56 (b) are part of a career pathway system;
57 (c) provide a pathway culminating in the equivalent of an associate's or bachelor's
58 degree;
59 (d) facilitate multiple exit and entry points; and
60 (e) recognize sub-goals or momentum points.

61 [(6)] (12) "STEM" means science, technology, engineering, and mathematics.
62 [(7)] (13) "STEM Action Center" means the center described in Section 63N-12-205.
63 (14) "Talent Ready Utah" means a partnership between the Governor's Office of
64 Economic Development, the Governor's Education Advisor, the Department of Workforce
65 Services, the Utah State Board of Education, the Utah System of Higher Education,
66 representatives of post-secondary technical education, industry partners, and the Utah STEM
67 Action Center.

68 Section 2. Section 63N-12-214 is enacted to read:
69 63N-12-214. Computing Partnerships Grants program.

70 (1) There is created the Computing Partnerships Grants program consisting of the
71 grants created in this part to provide for the design and implementation of a comprehensive
72 K-16 computing partnerships program, based upon the following common elements:
73 (a) outreach and student engagement;
74 (b) courses and content;
75 (c) instruction and instructional support;
76 (d) work-based learning opportunities;
77 (e) student retention;
78 (f) industry engagement;
79 (g) stacked credentials that allow for multiple exit and entry points;
80 (h) competency-based learning strategies; and
81 (i) secondary and post-secondary collaborations.

82 (2) The grant program shall incentivize public schools and school districts to work
83 with the STEM Action Center, staff of the State Board of Education, Talent Ready Utah,
84 industry representatives, and secondary partners on the design and implementation of
85 comprehensive K-16 computing partnerships through:
86 (a) leveraging existing resources for content, professional learning, and instruction,
87 including existing career and technical education funds, programs, and initiatives;
88 (b) allowing for the support of professional learning for pre- and in-service educators;
89 (c) supporting activities that promote and enhance access, diversity, and equity;
90 (d) supporting collaborations and partnerships between K-12, institutions of higher
91 education, cultural and community partners, and industry representatives;
92 (e) identifying the appropriate credentials that align with industry needs and providing
93 the credentials in a stacked credentials pathway;
94 (f) implementing a collaborative network that enables sharing and identification of best
95 practices; and
96 (g) providing infrastructure assistance that allows for the support of new courses and
97 the expansion of capacity for existing courses.

98 (3) The grant program shall include the following:
99 (a) rigorous and relevant metrics that are shared by all grant participants; and
100 (b) an evaluation by the STEM Action Center of the grant program that identifies best

practices.

(4) The STEM Action Center, in consultation with the State Board of Education, shall:

(a) in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, adopt rules:

(i) for the administration of the grant program and awarding of grants; and

(ii) that define outcome-based measures appropriate to the type of grant awarded under this part;

(b) establish a grant application process;

(c) in accordance with Subsection (5), establish a review committee to make recommendations for:

(i) metrics to analyze the quality of a grant application;

(ii) approval of a grant application; and

(iii) criteria to establish a requirement for an applicant to demonstrate financial need;

and

(d) with input from the review committee, adopt metrics to analyze the quality of a grant application.

(5) (a) The review committee shall consist of K-16 educators, staff of the State Board of Education, representatives of Talent Ready Utah, post-secondary partners, and industry representatives.

(b) The review committee shall:

(i) review a grant application submitted;

(ii) make recommendations to a grant applicant to modify the grant application, if necessary; and

(iii) make recommendations regarding the final disposition of an application.

(6) The STEM Action Center shall report annually on the grant program to the State Board of Education and any findings and recommendations on the grant program shall be included in the STEM Action Center annual report to the Education Interim Committee.

HB 426

STEM AMENDMENTS 2017 GENERAL SESSION STATE OF UTAH Chief Sponsor: Val L. Peterson Senate Sponsor: Brian E. Shiozawa

9 This bill modifies provisions related to the STEM Action Center.

10 Highlighted Provisions:

11 This bill:

12 ⇒ defines terms;

13 ⇒ creates an expendable special revenue fund called the “STEM Action Center
14 Foundation Fund”;

15 ⇒ provides for treating a portion of money in the fund as an endowment fund such that
16 the principal of the fund is not expended;

17 ⇒ modifies provisions related to the STEM Action Center creating a foundation; and

18 ⇒ makes technical changes.

19 Money Appropriated in this Bill:

20 None

21 Other Special Clauses:

22 None

23 Utah Code Sections Affected:

24 AMENDS:

25 63N-12-202, as renumbered and amended by Laws of Utah 2015, Chapter 283

26 63N-12-204, as last amended by Laws of Utah 2016, Chapter 139

27 63N-12-210, as last amended by Laws of Utah 2016, Chapter 139

28 ENACTS:

29 63N-12-204.5, Utah Code Annotated 1953

31 *Be it enacted by the Legislature of the state of Utah:*

32 Section 1. Section **63N-12-202** is amended to read:

33 **63N-12-202. Definitions.**

34 As used in this part:

35 (1) “Board” means the STEM Action Center Board created in Section 63N-12-203.

36 (2) “Director” means the director appointed by the board to oversee the administration
37 of the STEM Action Center.

38 ~~[(2)]~~ (3) “Educator” ~~[has the same meaning as]~~ means the same as that term is defined
39 in Section 53A-6-103.

40 (4) “Foundation” means a foundation established as described in Subsections
41 63N-12-204(3) and (4).

42 (5) “Fund” means the STEM Action Center Foundation Fund created in Section
43 63N-12-204.5.

44 ~~[(3)]~~ (6) “High quality professional development” means professional development that
45 meets high quality standards developed by the State Board of Education.

46 ~~[(4)]~~ (7) “Office” means the Governor’s Office of Economic Development.

47 ~~[(5)]~~ (8) “Provider” means a provider[,] selected ~~[by staff of the board and staff of the~~
48 ~~Utah State Board of Education, on behalf of the board]~~ on behalf of the board by the staff of the
49 board and the staff of the State Board of Education:

50 (a) through a request for proposals process; or

(b) through a direct award or sole source procurement process for a pilot described in Section 63N-12-206.

~~[(6)]~~ (9) "STEM" means science, technology, engineering, and mathematics.

~~[(7)]~~ (10) "STEM Action Center" means the center described in Section 63N-12-205.

Section 2. Section **63N-12-204** is amended to read:

63N-12-204. STEM Action Center Board — Duties.

(1) The board shall:

(a) establish a STEM Action Center to:

(i) coordinate STEM activities in the state among the following stakeholders:

(A) the State Board of Education;

(B) school districts and charter schools;

(C) the State Board of Regents;

(D) institutions of higher education;

(E) parents of home-schooled students;

(F) other state agencies; and

(G) business and industry representatives;

(ii) align public education STEM activities with higher education STEM activities; and

(iii) create and coordinate best practices among public education and higher education;

(b) with the consent of the Senate, appoint a director to oversee the administration of the STEM Action Center;

(c) select a physical location for the STEM Action Center;

(d) strategically engage industry and business entities to cooperate with the board:

(i) to support high quality professional development and provide other assistance for educators and students; and

(ii) to provide private funding and support for the STEM Action Center;

(e) give direction to the STEM Action Center and the providers selected through a request for proposals process pursuant to this part; and

(f) work to meet the following expectations:

(i) that at least 50 educators are implementing best practice learning tools in classrooms;

(ii) performance change in student achievement in each classroom participating in a STEM Action Center project; and

(iii) that students from at least 50 schools in the state participate in the STEM competitions, fairs, and camps described in Subsection 63N-12-205(2)(d).

(2) The board may:

(a) enter into contracts for the purposes of this part;

(b) apply for, receive, and disburse funds, contributions, or grants from any source for the purposes set forth in this part;

(c) employ, compensate, and prescribe the duties and powers of individuals necessary to execute the duties and powers of the board;

(d) prescribe the duties and powers of the STEM Action Center providers; and

(e) in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, make rules to administer this part.

(3) The board may establish a foundation to assist in:

(a) the development and implementation of the programs authorized under this part to promote STEM education; and

(b) implementation of other STEM education objectives described in this part.

(4) A foundation established by the board under Subsection (3):

(a) may solicit and receive contributions from a private organization for STEM education objectives described in this part;

(b) shall comply with ~~[Title 51, Chapter 7, State Money Management Act]~~ the requirements described in Section 63N-12-204.5;

(c) does not have power or authority to incur contractual obligations or liabilities that constitute a claim against public funds;

(d) may not exercise executive or administrative authority over the programs or other activities described in this part, except to the extent specifically authorized by the board;

(e) shall provide the board with information detailing transactions and balances ~~[of funds managed for the board]~~ associated with the foundation; and

(f) may not:

- (i) engage in lobbying activities;
- (ii) attempt to influence legislation; or
- (iii) participate in any campaign activity for or against:
 - (A) a political candidate; or
 - (B) an initiative, referendum, proposed constitutional amendment, bond, or any other ballot proposition submitted to the voters.

~~[(5) Money donated to a foundation established under Subsection (3) may be accounted for in an expendable special revenue fund.]~~

Section 3. Section **63N-12-204.5** is enacted to read:

63N-12-204.5. STEM Action Center Foundation Fund.

(1) There is created an expendable special revenue fund known as the “STEM Action Center Foundation Fund.”

(2) The director shall administer the fund under the direction of the board.

(3) Money may be deposited into the fund from a variety of sources, including transfers, grants, private foundations, individual donors, gifts, bequests, legislative appropriations, and money made available from any other source.

(4) Money collected by a foundation described in Subsections 63N-12-204(3) and (4) shall be deposited into the fund.

(5) Any portion of the fund may be treated as an endowment fund such that the principal of that portion of the fund is held in perpetuity on behalf of the STEM Action Center.

(6) The state treasurer shall invest the money in the fund according to the procedures and requirements of Title 51, Chapter 7, State Money Management Act, except that all interest or other earnings derived from those investments shall be deposited into the fund.

(7) The director, under the direction of the board, may expend money from the fund for the purposes described in this part.

Section 4. Section **63N-12-210** is amended to read:

63N-12-210. Acquisition of STEM education high quality professional development.

(1) The STEM Action Center ~~[shall]~~ may, through a request for proposals process, select technology providers for the purpose of providing a STEM education high quality professional development application.

(2) The high quality professional development application described in Subsection (1) shall:

- (a) allow the State Board of Education, a school district, or a school to define the application’s input and track results of the high quality professional development;
- (b) allow educators to access automatic tools, resources, and strategies , including instructional materials with integrated STEM content ;
- (c) allow educators to work in online learning communities, including giving and receiving feedback via uploaded video;
- (d) track and report data on the usage of the components of the application’s system and the relationship to improvement in classroom instruction;

(e) include video examples of highly effective STEM education teaching that:
(i) cover a cross section of grade levels and subjects;
(ii) under the direction of the State Board of Education, include videos of highly effective Utah STEM educators; and
(iii) contain tools to help educators implement what they have learned; and
(f) allow for additional STEM education video content to be added.
(3) In addition to the high quality professional development application described in Subsections (1) and (2), the STEM Action Center may create STEM education hybrid or blended high quality professional development that allows for face-to-face applied learning.